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*Handbook
of German
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A HANDBOOK OF GERMAN EAST AFRICA

*Prepared on behalf of the Admiralty
and the War Office*

ADMIRALTY WAR STAFF

INTELLIGENCE DIVISION

(I.D. 1055)

January, 1916

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NOTE ON SPELLING OF PLACE-NAMES

Some attempt has been made to adapt the German spelling of place-names to English usage. In doing so the principles laid down by the Royal Geographical Society have been followed as far as possible. On these principles the consonants are pronounced as in English and the vowels as in Italian. It is to be noted especially that 's' should always be pronounced like the unvoiced sibilant in 'sink' or 'price', and 'z' like the voiced sibilant in 'zinc' or 'prize'. By this means it is hoped that a reasonably phonetic spelling has been obtained, but owing to the inaccuracies of early explorers and the inconsistency of the German method of spelling itself there will be a considerable number of cases where the spelling gives little real guidance as to the actual pronunciation of the names.

The following are the main differences between the English and the German spelling :

<i>English.</i>	<i>German.</i>
sh	sch
j	dsch or dj
ch	tsch
y	j
s	ss
z	s
w	u (before a vowel)
v	w
e	ä

CHAPTER I

GENERAL GEOGRAPHY

Geographical Outlines—Climate—Vegetation—Zoology—Magnetic Variation.

GEOGRAPHICAL OUTLINES

Boundaries.—German East Africa is bounded on the E. by the Indian Ocean, from the Umba river in the N. to Cape Delgado in the S. This places both banks of the Rovuma estuary in German territory. From the mouth of the Umba river the northern boundary runs approximately NW. to the intersection of the first parallel of southern latitude with the E. shore of Victoria Nyanza. This boundary, however, makes a curve round the foot of Mount Kilimanjaro, and includes that mountain in German territory.

The boundary between Lake Victoria Nyanza and Lake Kivu, across Lake Kivu, and from Lake Kivu to Lake Tanganyika, was determined by the boundary treaty of May 14, 1910. It joins the northern shore of Lake Kivu at a point half-way between Ngoma and Kisenyi, and proceeds S., leaving on the W. the islands of Iwinza, Nyamaronga, Kwijwi, and Kitanga in the possession of Belgium, and on the E. the islands of Kikaya, Gombo, Kumenib, and Wahu in the possession of Germany. From Lake Kivu the boundary follows the valley of the River Rusisi, keeping to the chief western branch of the Rusisi delta from its most northern point to Lake Tanganyika. It then follows the middle of Lake Tanganyika to its southern end at Bismarckburg, whence it goes SE. to the northern end of Lake Nyasa. Rather more than half-way down the lake it turns E. and joins the Rovuma river, whose course it follows nearly to the sea.

The adjoining territories are as follows : On the N., the British East Africa Protectorate and Uganda ; on the W., Belgian Congo ; on the SW., Rhodesia and Nyasaland ; and on the S., Portuguese East Africa.

The coast-line is about 470 miles in length. The total area of

the protectorate is about 385,000 square miles, almost twice the size of the German Empire.

Physical Features.—Along the coast lies a maritime plain varying in width from 10 to 40 miles.

The coast is protected by coral reefs, behind which lie numerous lagoons fringed with mangroves and coco-nut palms. The entrances to the harbours are, as a rule, shallow, and must be approached with caution.

From the maritime plain the country rises gradually to the plateau which constitutes the greater part of the hinterland.

This plateau is bounded on the E. by the following mountain-ranges, beginning from the N. : Pare, Nguru (Unguru), Usagara, and Uhehe. The last-named range bends westward to the N. point of Lake Nyasa.

The inland plateau falls sharply from a general level of 4,000 ft. to the level of the great lakes (Tanganyika 2,590 ft. and Nyasa 1,607 ft.).

Lake Rukwa, near the S. of Lake Tanganyika, forms the southern point of the great Rift valley, which runs northwards across the inland plateau at a height of from 2,000 to 4,000 ft. to Lake Naivasha in British territory.

Geology.—The soil has a basis of granite, gneiss, mica schist, and quartzite, with a later formation of sandstone in horizontal layers. On the coast is coral limestone. Volcanic rock is found about Kilimanjaro. Kirungo-cha-gungo is an active volcano, 11,000 ft. in height, at the N. end of Lake Kivu.

Lake and River System.—The lakes on the western and north-western boundary of the protectorate form as it were another coast-line. These are the great lakes Victoria Nyanza, Tanganyika, and Nyasa, to which may be added Lake Kivu and Lake Rukwa. There are a number of smaller lakes in the NW. corner between Lake Victoria Nyanza and Lake Tanganyika. There are also a few lakes in the N. in the neighbourhood of the Rift valley.

The river system may be divided into the rivers which flow (1) to the Indian Ocean and (2) to the great lakes. In addition there are a number of rivers flowing into the smaller lakes or disappearing into marshes. By far the most important rivers are those flowing into the Indian Ocean. Among these may be mentioned (N. to S.) the Pangani, the Wami, the Kingani or Ruvu, the Rufiji, the Matandu, the Mbemkuru, the Lukuledi, and the Rovuma. The most important rivers flowing into the great lakes are the Kagera (into Victoria Nyanza) and the Mlagarasi (into Tanganyika).

CLIMATE

The climate of German East Africa is determined by its position between 1° and 12° S. latitude, and its position relatively to the Indian Ocean, which is considerably warmer than the Atlantic. Generally speaking, the rainfall is low for a tropical country, and varies greatly from year to year. In some years there are great droughts. Three types of climate are to be distinguished : (1). The Indian or trade-wind type which prevails over the greater part of German East Africa ; (2) the monsoon type which prevails in the NE. ; (3) the equatorial type which prevails in the NW.

(1) The first type of climate is influenced primarily by the SE. trade winds. It has only one rainy season in the year and its hottest period is at the end of November, immediately before the beginning of the rainy season. The coolest and driest period of the year is from June to August when the SE. trade winds blow. Thereafter it becomes increasingly warmer until the rainy season, which lasts from December till April, with the heaviest rainfall from December to February. The winds during the rainy season are light and vary from NE. to S.

(2) The monsoon type of climate has two rainy seasons.

The SE. trade wind prevails to a great extent from June to September, but turns gradually to S. and passes into the SW. monsoon. This period of SE. to SW. winds is the cool and dry season. In the mountainous parts there is generally a third or little rainy season in July.

After the southern winter the NE. monsoon gradually prevails. There is an interval of varying and gentle winds which give rise to the lesser rainy season at the end of October or in November. When the NE. monsoon establishes itself there follows the driest and warmest period of the year (December to February).

During the interval of uncertain winds between the departure of the NE. monsoon and the return of the SE. to SW. winds which prevail between June and September there is the great rainy season from March to May with extraordinarily copious rainfall.

The hottest month is February, just before the beginning of the great rainy season.

This type of climate prevails in the NE. and is bounded by a line running from the mouth of the Rufiji right through the protectorate to the NW., including the countries of Uluguru and Unguru together with most of the smaller northern lakes except Eyasi lake. Usagara, Ugogo, South Unyamwezi, and Tabora are under the influence of the Indian or trade-wind type of climate.

(3) The equatorial type of climate is distinguished from the other two in that it has two warmer and two cooler seasons, with two rainy seasons separated by a short abatement of the rains. The two warmer periods are October and February–March, the two cooler July and November–December, i.e. the warmer periods are when the sun is above the Equator, the cooler when it is at its farthest north and south. The difference in warmth of the coolest and warmest months is slight. In Ujiji, for instance, with an average yearly temperature of 75°F. , the seasonal range is only about 4.5°F.

Easterly winds prevail in this district. From May to August the SE. trade wind blows hard and the dry season lasts from May to September (Victoria Nyanza) or even October (Tanganyika). The rainy season is from October to May (Victoria Nyanza) or November to April (Tanganyika). There is a short abatement in the middle of the rainy season about January which divides it into two parts. The influence of the NE. monsoon does not extend so far inland, and the type of climate is affected considerably by the local winds in the basins of the great lakes, and by calms.

This NW. region is bounded roughly by a line drawn from S. of Ujiji to the S. end of Lake Manyara, and from there due N. It includes the country W. of Victoria Nyanza and Victoria Nyanza itself, together with the large districts of Usukuma, North Unyamwezi and Uha, and the country round Lake Tanganyika as far S. as Ujiji.

The height above sea-level with its different effects on the sea-winds gives rise to a considerable variety of climates, but as the local climates which differ considerably from the three main types are restricted to relatively small regions they do not seriously affect our general description.

From this point of view we may distinguish six climatic levels.

(1) The warm and rather damp coast-region (up to rather more than 300 ft. above sea-level). The characteristics of this are high humidity of atmosphere, moderate rainfall, and a temperature moderated by the neighbourhood of the sea. Average yearly temperature 78°F. ; yearly variation on the N. coast 12° – 14°F. , on the S. coast 20° . Daily variations in the extreme months on the N. coast 11° – 16°F. , on the S. coast 20° – 22° .

(2) The hot and moderately dry zone between the coast and the hills which bound the central plateau (300 ft.–1,600 ft.). Characteristics: low humidity of atmosphere, less rain, rather lower yearly temperature, but with greater daily and yearly variations.

(3) The moderately warm and moist zone of the eastern slopes of the hills which bound the central plateau (1,600–6,500 ft. and

more). Characteristics: high humidity of atmosphere, heavy showers almost daily, and a somewhat lower temperature with great extremes.

(4) The hot and dry zone of the central plateaus (average height 4,000 ft.), which, of course, differs very greatly in different places. Its prevailing characteristics are, however, very low humidity of atmosphere (Tabora under 40 per cent.), little rainfall (Tabora 32 inches), fairly high mean temperature (Tabora July, 70° F., October, 77° F.), great daily and yearly variations (Tabora daily up to more than 36° F.).

(5) The cool and moist zone of the subalpine heights (6,000–10,000 ft.). To this belong only the heights mentioned under (6), and the higher peaks of Usambara, Unguru, Usagara, Uluguru, Uhehe, Konde, and Ruanda, with the Livingstone mountains and a few volcanoes of the great Rift valley. Characteristics: high humidity of atmosphere, much mist, fairly low yearly temperatures with great extremes.

(6) The cold and dry alpine zone above 10,000 ft. This includes Kilimanjaro, Meru, Karisimbi, Muhuwara Lomalasin, and a few smaller mountains. Characteristics: low humidity of atmosphere, little rain, snow, low temperature with very great extremes.

The sun is dangerous on the coast, even when there is a cool breeze, but on the high ground inland a double Terai hat is sufficient protection. Frosts occur at the higher altitudes and the cold nights necessitate warm blankets.

Further notes on the climate will be found in Chapter V under the separate Districts. For statistics of rainfall, temperature, humidity, and sunshine, see Appendix I.

VEGETATION

The character of the vegetation is determined (so far as climatic considerations are concerned) primarily by the rainfall and only secondarily by the temperature. Hence the great variations in rainfall give to German East Africa great differences in vegetation, ranging from tropical forest to desert.

We confine ourselves here to a brief description of the main types of vegetation. For their distribution see the description of the different districts in Chapter V.

(1) The vegetation of the regions that are periodically dry.

(a) *The open grass steppe* or high-grass steppe, often described simply as steppe. This is covered with tall grass which springs up during the rainy season on the inland plateau to a height of

over 6 ft. It dies down again after the rains as quickly as it grew, leaving the plains almost bare except for a few scattered bushes.

(b) *Savanna* or parkland (tree-grass-steppe or bush-grass steppe) is grass steppe with bushes or trees either isolated or in clumps. It is possible to see for miles in all directions. The chief types of tree are acacias, baobabs, and doum-palms (*Hyphaene* palms). Occasionally one type of tree may prevail and its name be given to the steppe as a whole, e. g. Umbrella-acacia steppe.

(c) *Steppe forest*, *dry forest* (xerophilous forest), or *Myombo forest*. This is sometimes called *foliaceous* forest or high forest. It consists principally of trees 20 to 70 ft. high with fairly straight stems and deep roots which can reach the water collected beneath the surface of the ground. There is relatively little grass in it and the under-wood is so light that one can see and move through it with ease. Various kinds of Myombo tree predominate in it, and the baobabs and doum-palms of savannas are seldom or never found.

(d) There are many names given to the driest form of steppe described generically by the Germans as poor in grass (*grasarm*). These differently named steppes range from the 'vegetable-garden' steppe covered with isolated acacias to the desert steppe. Of these the most noteworthy is the thorn-bush steppe covered with thorn-bushes and occasional trees. Snakes are generally found in the neighbourhood of thorn-bushes. Most of these different steppes are interesting in two ways. Firstly, they offer an easy passage to the incursions of nomads with their cattle, and secondly, all except the driest of them appear to be capable of cultivation.

(2) The vegetation of the regions which are periodically dry but have a high humidity of atmosphere.

Bush or evergreen coast bush is intermediate between the types of vegetation previously considered and the tropical forest. It is found on the coast behind the zone of creeks and mangroves and passes gradually into the thorn-bush thickets of the coast plateaus. It is also found on the lower slopes and foot-hills of some of the mountains in the inland plateaus. It is thick and impenetrable owing to the abundance of moisture, but it never attains to any great height like the tropical forest. It is used by the natives as a place of refuge in the case of wars and invasions. Its only products are rubber and a few nut-woods.

(3) The vegetation of the regions which are always humid.

(a) *The evergreen or tropical rain forest* is found on the slopes of the mountains, especially those facing the sea winds from the E. It is found between 1,600 and 4,000 ft. above sea-level and is

sharply marked off from the xerophilous formations above and below. It consists of tall trees up to over 200 ft. with smaller trees growing among them and thick underwood beneath, and is full of giant creepers. It is always dark and almost impenetrable. When cleared it offers most excellent soil for cultivation.

(b) The highest level to which the tropical forest can attain is about 4,500 to 5,000 ft. On hills which do not rise much above this the tropical forest is succeeded by low bush with ferns and heather or else by pasture land. When, however, the hills rise above 6,000 ft. this is followed in turn (owing to the effect of the clouds) by *mountain or cloud forest*, which often begins with a short stretch of bamboos and ascends to 9,000 or even nearly 10,000 ft. Its trees are evergreen like those of the rain forest, but much more massive, with smaller leaves and fewer creepers. This is succeeded at 10,000 ft. by xerophilous bushes and grass, which are finally followed in the case of the highest mountains by alpine desert above 13,000 ft. The mountain forests are only useful for fuel and for some kinds of nut-wood. They also have an effect on the climate by retaining moisture.

(c) Owing to the activity of the natives the mountain forests (which at one time were much more widespread) have given place to high meadow lands which are excellent for cattle and suitable for settlement and cultivation by Europeans.

(4) The vegetation beside freshwater lakes and rivers and the sea-coast.

(a) By the sloping banks of rivers there is found what is really a type of rain forest called *gallery forest*. This is sometimes the case even with river-beds which are only filled in the rainy season. From the outside this kind of forest appears impenetrable, but one can generally find passages through it everywhere. When cleared it offers suitable soil for European plantations.

In the case of flood areas and swamps along the banks of rivers we find great thickets of *reeds and papyrus*.

(b) *Mangroves* are found at the river-mouths and the borders of creeks and in many places on the sea-coast. They seem to require brackish or saline water, and in some places they are almost covered at high tide. In East Africa they are generally too low to be called wood or forest, and present the appearance of thick evergreen bush. They help to keep the land from being washed away, and produce building-wood and tannin.

The chief plants that are cultivated by the natives (whose only agricultural implement is the hoe) are maize and millet, rice, sesame, coco-nut, manioc (cassava), sweet potatoes, yams, beans,

bananas, sorghum, and eleusine (for beer). The principal plants cultivated by Europeans are coffee, sisal-agave, rubber, and cotton. The Europeans also cultivate coco-nut, rice, corn, sugar, tobacco, wattles, camphor, and cinchona.

It should be noted further that the vegetation is influenced by the yearly burning of the grass, which often extends to the forests. The native system of clearing a portion of the forests for cultivation and then passing on after a short time to a new settlement also affects the character of the vegetation. Generally speaking there appears to be a tendency for the forest land to be diminished.

ZOOLOGY

The interior produces game in vast quantities, and the German Government has adopted game-laws, very similar to those in operation in British East Africa, with a view to the protection of all kinds of game. The number of dangerous carnivora renders special precautions necessary when camping at night. Snakes, scorpions, and centipedes abound. It is advisable to look carefully into one's boots before putting them on. Swarms of locusts are common, and these with the various kinds of ant do serious damage to the crops. The presence of the tsetse-fly (which is found in bush country wherever there is stagnant water and is continually passing from place to place) renders cattle-farming impossible in the districts of Usaramo, Ukami, and Khutu. It is also deadly to horses. Coast-fever is another great obstacle to cattle-farming and is very widespread. It is conveyed by ticks, and the only means of prevention is the yearly burning of the grass.

The greatest curse to the East African traveller is the jigger, or burrowing flea, which has reached East Africa from the West coast. Porters are frequently permanently lamed by its ravages, for the female flea burrows under the skin, usually under the toe-nail, and if the egg-sac is not speedily removed a serious wound ensues.

Europeans who take care of themselves do not suffer to any extent from these pests, but it is wise never to put the bare foot on the ground.

On the maritime plain mosquito nets should be used. These can be dispensed with on the high ground inland.

MAGNETIC VARIATION

The magnetic variation varies from $6\frac{1}{2}^{\circ}$ W. in the NE. to $10\frac{1}{2}^{\circ}$ W. in the SW. The lines of equal magnetic variation run from NW. to SE. The magnetic variation is decreasing by about 9' annually.

CHAPTER II

HISTORY AND ADMINISTRATION

History—Officials—Districts—Taxation of Natives—Justice—Police—
Population—Slavery—Currency.

HISTORY

It is probable that the natives of East Africa had a certain amount of trade with Arabia and India from very early times, perhaps before the beginning of the Christian Era. Actual colonization by Arabs appears to have begun in the 8th century A. D. as a result of the spread of Islam. They were joined by Persians from Shiraz about A. D. 975, and these Arabian and Persian colonies, extending all along the coast as far S. as Rhodesia, reached the height of their prosperity from A. D. 1100 to 1300.

Vasco da Gama sailed along this coast in 1498, and in the first ten years of the next century the Portuguese succeeded in establishing themselves by force in Zanzibar, Kilwa, and Mombasa.

Their power, however, rested always on rather weak foundations, and the Arabs of Oman and Maskat succeeded in throwing the Portuguese out of Oman itself in 1650, and proceeded to attack them in Africa. In the next fifty or sixty years they succeeded in capturing most of the Portuguese strongholds, and although quarrels among the Arabs allowed the Portuguese to recover a little of their power, the Arabs were pretty firmly established, and finally the victorious Sultan Seyid Said removed his residence in 1840 from Maskat to Zanzibar. After his death his territories were divided between his two sons, and Zanzibar became an independent sultanate in 1856. This second period of Arab domination was the great period of the slave trade, when the Arabs forced their way far into the interior, and treated the native population with the greatest cruelty. Arabs and Indians made great profits out of the trade in slaves and the accompanying trade in ivory.

When the English put a stop to the slave trade by their treaty with the Sultan of Zanzibar in 1873 matters became even worse. The Arab plantations became impoverished through lack of labour, and their owners betook themselves to the ivory trade and slave-hunting in the interior. This was put an end to with the partition of Africa, when the Germans established their hold on the country in 1884.

European Discovery.—The interior of German East Africa was discovered principally by Englishmen and Germans. Among these may be mentioned Rebmann, Krapf, Burton, Speke, Grant, von Decken, Roscher, Livingstone, and Stanley. It was at Ujiji on Lake Tanganyika that Livingstone and Stanley had their celebrated meeting. Since the German occupation the country has in many places been carefully explored by Germans, among whom may be mentioned Fülleborn and Meyer.

The German Occupation.—German East Africa, the most important of the German Protectorates, came under German influence through the individual initiative of Dr. Karl Peters.

In 1884 Peters, with three companions, made a journey to the interior, and in six weeks concluded twelve treaties with native chiefs, the territory of these chiefs being then declared by the explorers to be German territory. Peters returned to Berlin, and in 1885 the newly acquired land was placed under the Imperial Government.

This arrangement was recognized by the British Government in 1886, but a ten-mile belt along the littoral was still held to belong to Zanzibar, Germany retaining the port of Dar-es-Salaam.

Two years later Germany acquired the right of collecting customs duties on the coast, and in 1890 took over the coast strip on payment of £200,000 to the Sultan of Zanzibar. The islands along the coast, except Zanzibar and Pemba, form part of the Protectorate.

The development and pacification of the Protectorate in its early days was largely due to the energy and enterprise of Major Wissmann, who organized and paid the troops raised in 1889 to quell the Arab rising, launched the first German steamer on Lake Nyasa, and took part in the suppression of many of the native insurrections which signalized the bringing of the country under European rule.

From 1891 to 1893 the Germans were engaged in war with the Wahehe of the plateau region S. of the Rufiji river. These are a warlike people with a certain resemblance to Zulus in appearance, character, and mode of warfare. After this there was a period of comparative peace (with, however, a certain number of small punitive expeditions every year) till the serious native rising of 1905. This took place in the southern districts of the colony between north Nyasa and the Kilwa coast. Nearly all the tribes, Mohammedan and Pagan, took part in it, and officials, missionaries, planters, and traders were murdered, as the Germans were taken completely by surprise. It took nearly a year and a half to subdue this rebellion completely, and some 120,000 natives (adults and children) died during this struggle, or from its immediate results. The period following the conclusion of the rebellion was one of even

greater suffering for the natives than that of actual hostilities, as the military authorities were obliged to seize all available food supplies, either for feeding the German force or for purposes of denying them to the enemy. In spite of subsequent efforts to relieve the distress, the effects of this depopulation are still to be seen in the coast belt of Kilwa and the Rovuma watershed.

It was alleged that this great rising was caused by misgovernment, and by imposing on the people labour taxes, which were most unpopular, especially when this forced labour was leased out to conscienceless European planters. Herr Dernburg—then German colonial minister—came out in 1907 to investigate the cause of this revolt. Since his recommendations were adopted the whole of German East Africa has been comparatively peaceful, and the natives are said to have more confidence in the Government. The labour conditions of the colony are now much more strictly supervised. Herr Dernburg made some study of British colonial methods at this time.

ADMINISTRATION, POPULATION, &C.

Officials, &c.—The German Imperial Chancellor was formerly responsible for the administration of all the German Protectorates, but on May 17, 1907, the Colonial Office was separated from the Foreign Office and made independent. At the same time Dr. Dernburg was appointed Secretary of State for the Colonies.

The head of the local government is the Governor. He is assisted by a council which meets twice a year and appears recently to have become more representative, but he is practically all-powerful. The post and telegraph department is outside his jurisdiction, but he is the supreme civil and military authority, although the Protectorate troops (*Schutztruppe*) were placed under a separate commander in 1906; as it was found impossible for one man to control both the civil and military administration. Dr. Schnee was appointed Governor in July 1912.

The Protectorate is divided into 24 administrative districts (*Bezirke*). Of these 19 are civil districts, 2 are military districts, and 3 are residencies (see map). The administration becomes civil as soon as the District is considered sufficiently under control.

The civil administrators are responsible for the safety and well-being of their Districts, and they administer justice. For the maintenance of order they have a body of police under their authority.

The military administrators have to maintain order in their Districts and protect them from incursions by other tribes. They are also charged with the development of the country and the

opening up of communications. In the administration of justice they are confined to deciding quarrels between the chiefs, and so preventing recourse to arms. They refrain from interfering in internal matters, and endeavour to win over the sympathies of the influential chiefs to the Germans.

In the case of Residencies the native chiefs are under the general control of the Residents, who do not themselves exercise any direct authority.

The civil administrators are assisted by District councils—there are also one or two town councils—but the power of these is strictly limited.

Some of the tribes are still administered by their own chiefs or sultans, who act as local authorities under the German Government. Other tribes are organized under *Akidas*, paid native officials, each of whom has powers of inflicting corporal punishment for minor offences, and of collecting taxes in a certain area (perhaps 100 villages). The headman of one village or more, often chosen by the natives, is called a *Jumbe*. His duties include the finding of labour and supplies for the Government or for European travellers. The *Wali* is a native magistrate. Native assessors have been successfully used in some District Courts in cases where natives only have been concerned.

The general administration is divided into 20 branches under 14 head officials who reside at Dar-es-Salaam.

The following is a list of the districts with their capitals :

<i>Civil Districts.</i>	<i>Capitals.</i>
I. Wilhelmstal	Wilhelmstal
II. Tanga	Tanga
III. Pangani	Pangani
IV. Bagamoyo	Bagamoyo }
V. Morogoro	Morogoro }
VI. Dar-es-Salaam	Dar-es-Salaam
VII. Rufiji	Utete
VIII. Kilwa	Kilwa Kivinje
IX. Lindi	Lindi
X. Songea	Songea
XI. Langenburg	New Langenburg
XII. Bismarckburg	Bismarckburg
XIII. Ujiji	Ujiji
XIV. Tabora	Tabora
XV. Dodoma	Dodoma
XVI. Kondoa Irangi	Kondoa Irangi

XVII. Moshi . . .	Moshi
XVIII. Arusha . . .	Arusha
XIX. Mwanza . . .	Mwanza
<i>Military Districts—</i>	
XX. Iringa . . .	New Iringa
XXI. Mahenge . . .	Mahenge
<i>Residencies—</i>	
XXII. Bukoba . . .	Bukoba
XXIII. Ruanda . . .	Kigali
XXIV. Urundi . . .	Gitega

The most important change in recent years has been that affecting Dodoma and Kondoa Irangi. These were formerly the Districts of Kilimatinde and Mpapwa. Kilimatinde and Mpapwa are now sub-districts of Dodoma; and Kondoa Irangi, which was formerly a sub-district of Mpapwa, has been made into a District and includes what was formerly the N. part of Kilimatinde. That is to say, the boundary which formerly ran N. and S. between Kilimatinde and Mpapwa now runs E. and W. between Kilimatinde and Kondoa Irangi. Another recent change is the separation of Wiedhafen sub-district (E. coast of Lake Nyasa) from Langenburg District. It is now attached to Songea. (See map.)

Where the Districts are large they have often sub-districts under them, and in addition to the main district office (*Bezirksamt*) there are sub-district offices (*Bezirksnebenstellen* or *Nebenstellen*). The staff of the main district office includes a civil administrator (*Bezirksamtmann*), a clerk, assistant clerk, and a police sergeant, while that of the sub-districts includes a clerk and a police sergeant.

Within the last few years special officials (*Distriktkommissäre*) have been appointed to deal with the labour problem in several of the regions where labour is most employed, e. g. the Usambara valley and along the Central Railway. They must not be confused with the District Administrators (*Bezirksamtmänner*). They superintend the relations between employers and employed. The Government introduced regulations in October 1913 under which a definite rate of remuneration is fixed for the labour recruiters, definite districts are assigned to these men for their operations, and the period of time for which labourers may be engaged is extended from 6 months to 1 year.

Taxation of Natives.—The main forms of taxation have been the hut-tax and the poll-tax.¹ The hut-tax was fixed at 3 rs. a year

¹ Labour for certain purposes (e. g. portorage, and local public works) is often practically compulsory, though paid.

(3s. 10½d.). But it was not levied outside those districts on which the administration had a comparatively secure hold. Gradually the area within which it could be raised was increased, and, especially in the years following the suppression of the revolt of 1905-6, many regions formerly untaxed were made to contribute, and in others a more exact control was established.

The hut-tax was found to have disadvantages. It failed to reach most labourers and porters, and it discouraged domiciliary settlement. There was a disinclination to build new huts, and several families often shared one hut in order to decrease the burden of the tax. A subsidiary poll-tax was therefore introduced in 1908. Workmen on European plantations had to pay 12½ heller a month, while in the interior every adult male native not liable to hut-tax and capable of doing labour had to pay 1-3 rs. a year.

Before the present war it had been decided to make the poll-tax the principal impost, while the hut-tax was to become subsidiary. How far this change has actually been carried out is uncertain.

These taxes can be paid by natives in money, in labour, or in kind. Oil-yielding vegetable products, such as ground-nuts, sesame, &c., cotton, copra, rubber, ivory, and beeswax are accepted; and also, in the stations of the interior, various kinds of grain and cattle.

The taxes are assessed and levied by the local authorities. In the interior the hut-tax, except in such places as the Governor classed as towns, is assessed in each neighbourhood and paid over to the Government by the *Akida*, sultan or chief, the *Jumbe* being responsible for its payment by his village. The control of the Government over the action of these native authorities has increased considerably in recent years (their perquisites have been decreased, &c.); and the change from hut-tax to poll-tax will probably restrict their power still more seriously.

A tax on trades and non-agricultural industries is also levied, but it does not fall on the domestic manufactures of the natives.

Justice.—For the maintenance of justice among Europeans or others who possess the same rights, e.g. Arabs or Indians, there are five high courts at Dar-es-Salaam, Tanga, Moshi, Mwanza, and Tabora. The supreme court is at Dar-es-Salaam. The boundaries of the judicial districts which fall under these courts will be found marked upon the map.

The judge when hearing cases is assisted by four European assessors.

The district courts can only deal with coloured people. Appeal may be made from them to the Governor.

Corporal punishment appears to take a prominent part in the enforcement of the laws, for in 1911-12 no less than 5,944 official floggings were administered.

Natives are also liable to punishment by death, imprisonment, and fines. The approximate numbers so punished in 1911-12 are as follows :

Death	16
Imprisonment, under six months	10,718
" over six months	1,127
Fines	3,518

Police Forces.—The number of the police or constabulary forces, who undergo a military training, is 2,140 native non-commissioned officers and men. The number of the European officers is 53, 49 of whom are non-commissioned officers in charge of the various sections distributed at the posts in the Protectorate, where the police are under the command of the local District Administrator.

Population.—The total white population on January 1, 1912, was 4,866—an increase of 639 since January 1, 1911.

Of this number there were 3,239 male adults, 919 female adults, 708 children under 15 years.

The various nationalities were as follows :

Germans	3,579 ¹
Austrians	94 ¹
British	128
Colonial English (chiefly Boers)	268
Dutch	65
French	113
Swiss	23
Italians	55
Greeks	336
Turks, &c.	99
Americans	14
Belgians	4
Russians	58
Portuguese	4
Scandinavians	9
Others	17
Total	4,866

¹ It has been reported that in 1915 the estimated number of Germans and Austrians was 5,047 (including men, women, and children).

The occupations of the male adults were thus recorded :

Government officials	436
Europeans of Protectorate troops	201
Missionaries	449
Planters, &c.	758
Engineers, &c.	327
Labourers and miners, &c.	429
Traders	442
Doctors, &c.	29

The coloured population (other than native) was 14,933. The total native population was estimated at 7,495,800.

Slavery.—The law for the abolition of slavery, brought in on December 24, 1904, legislated for the freedom of all children born to house slaves after December 31, 1905.

Currency.—By an Order in Council, dated April 23, 1904, a new coinage was introduced into the Protectorate. The German rupee (1s. 3½d. approximately) was divided into 100 heller instead of 64 pesas.

Weights and Measures.—For native weights and measures see Appendix II.

CHAPTER III

ETHNOGRAPHY

The Native Peoples.—German East Africa has always been subject to the migrations of races, owing to the fact that the steppes of the central plateau present no serious obstacle. Even the places covered by Myombo forest can generally be passed easily by a détour, and the rivers are usually plentifully supplied with fords. Hence there is a considerable admixture of blood throughout the whole region, and as a result of long development there is a general similarity of race, though with considerable variation between different types. It must also be observed that the country is open to the N. and S., while in the E. the mountains along the coast, and in the W. the great lakes (except Victoria Nyanza) with the surrounding ranges, form a considerable obstacle. Hence the migrations have always taken the direction of N. to S. or S. to N.

To discover the historical origin of the different types, or even to distinguish sharply the different races from one another, is as difficult in the case of German East Africa as it is in the case of the British Isles. All that one can do is to make a rough sort of division and supplement it by plausible guesses.

The earliest inhabitants of the country are supposed to have been a reddish-yellow pygmy-like people who seem in some respects akin to the Bushmen and Hottentots. They are supposed to have come in prehistoric times from India. To this stock the Wahi, Wanegi, and Wakindiga (round Lake Eyasi), the forest Batwa in Urundi and Ruanda, and the Wasandawi north of Ugogo are supposed to belong, but they are mixed with their neighbours and have no special language or civilization of their own.

Considerably later, the earlier or primitive Bantu (tall and black or chocolate coloured) are supposed to have arrived in the country from South Asia, and to have driven the earlier inhabitants into the hills. The tribes of this stock resemble each other considerably in speech and customs, and form a sort of groundwork of the population of German East Africa from the coast to Tanganyika and Nyasa in the W., and the southern shore of Victoria Nyanza in the N. The chief peoples of this stock on the coast

are the Wazeguha, Wazaramo, Wakhutu, Wangindo, Wandonde, Wamwera, Wamakonde, &c.; on the mountains which border the interior Washambaa, Wanguru, Waluguru, Wasagara; on the central plateau Wanyamwezi, Wasukuma, Wawinza, Wakimbu, Wafipa, and others; and in the region between the lakes the Wahutu and Wanyambwe, who are mixed with the Hamitic invaders called Wahuma.

Much later (but probably before 7000 B.C.) came a second Bantu invasion. These later Bantu are supposed to have been pressed southwards by Hamitic peoples in the N. Others maintain that they are the same people as the earlier Bantu, but have been modified by their Hamitic neighbours. The tribes of this stock are said to be the Wakamba, Wanyika, Wapare, Wajagga, Wambugwe, Wagogo, and others. The Swahili or Waswahili of the coast, who are mixed with all sorts of other stocks, are said to belong to this type.

All types of Bantu practise agriculture with the hoe, and leave the greater part of the field-work to women. They have never learnt to use the plough.

Much later still a great wave of Hamitic and Proto-Semitic or Hamitic-Semitic peoples is supposed to have come over the Red Sea from Arabia into the Nile country and to have pressed down gradually into German East Africa. The Hamitic type is negroid rather than negro, and is perhaps due to a mixture of Caucasian and negro blood. This is supposed to have been the basis of the population of ancient Egypt, and the features of this type are much closer to those of Europeans. There are two groups of this type in German East Africa—the Wahuma in the NW. and the famous Masai in the NE.

The Wahuma are supposed to have arrived in German East Africa five or six hundred years ago. They are lighter in colour than the Bantu, and approximate to the Somalis in appearance. They pressed first into Uganda and spread along the W. side of Victoria Nyanza into Unyoro, Karagwe, Ruanda, Uha, and even North Unyamwezi. They form an aristocracy in all these regions, and are called in Unyoro Wahuma, in Uganda Walindi, in Karagwe Wahinda, in Ruanda Watusi or Wasamboni, elsewhere Wawitu, and so on. They are distinguished from the Bantu by possessing cattle, but they have adopted the Bantu language and mixed themselves to a great extent with the Bantu peoples.

Before coming to the Masai we may note that in Shirati, on Victoria Nyanza, there is a small district occupied by Nilotic negroes. These are a tall people with long legs but poorly developed calves.

They also have rather prominent cheek-bones. The purest type of these are the Wagaia in the neighbourhood of Shirati. The Bantu to the S. of these, the Wazoba, Waruri, and Washashi, have a considerable admixture both of Nilotic and of Masai blood.

The Masai stand very much apart from the other negro races, and are Hamitic with perhaps a mixture of Nilotic blood. They are the latest invaders of German East Africa from the N., but were preceded by other tribes of a somewhat similar stock, the Wakwafi, Wandorobbo or Andorobbo, Wataturu, Wambugu, and others. The Masai were a people of splendid physique and handsome appearance, occupied primarily with cattle-rearing and fighting. They swept everything before them and penetrated as far as Ugogo and Usagara, where they were met by a similar invasion of Zulu warriors from the S.

The Zulu peoples appeared at Mazimba on the lower Zambezi about the middle of the sixteenth century, and in a few decades they swept over the whole of the E. African coast land to N. of Mombasa. They were utterly defeated near Malindi towards the end of the sixteenth century and disappeared quickly into the surrounding tribes. Migrations of Zulu warriors from the Zambezi continued to take place during the next centuries, but only in the middle of the nineteenth century did they penetrate into German East Africa. All these Zulu tribes were cattle-rearers and slave-hunters. As Mafitu or Mafiti they covered the district N. of the Rovuma; as Wangoni they plundered the district E. of Lake Nyasa; as Watatu they penetrated from the N. of Lake Nyasa right to Uzinja on the Victoria Nyanza, where they gradually mixed with the other races or became separate bodies of peaceful cattle-rearers and agriculturalists. The Wangoni were almost exterminated by the Germans in the great rising of 1905-7.

One may note further that some Bantu tribes, impressed by the success of the Zulus, adopted their weapons and customs and took to plundering their neighbours. Such are the Mahenge and Wahehe. The Germans call them Zulu-apes, and suppressed them in 1891.

A peaceful migration at the present is that of the Bantu Wayao and Makua, who are crossing from Portuguese East Africa into German territory, and settling among the Wandonde and the Wamakonde.

In general, then, the Bantu form the ground-work, with a layer of Wahuma and Masai in the N. and a layer of Zulus in the S. The Masai and the Zulus never really came to close grips, owing to the German intervention. The division between these two great groups of peoples is roughly the caravan-route Dar-es-Salaam-Tabora.

Language.—This forms the subject of a separate chapter (XII),

but it may be remarked here that apart from the Nilotic and Hamitic tribes in the N., whose language shows traces of their origin, the various tribes (including the Zulus) all speak a language based on Bantu.

The Swahili on the coast, who are a mixture of Arabs and Bantu, speak Swahili or Kiswahili, a sort of Bantu language with a considerable admixture of Arabic words, of which the number is always increasing. Its main stock of words and its grammar are Bantu, but Arab influence has simplified the grammar considerably. It is spoken generally on the coast and to a great extent on the trade routes, and may perhaps become the general language of Central Africa. Its only possible rival will be English.

The Bantu languages generally are agglutinative, that is to say their syntax is formed by adding prefixes and suffixes to the root. It is worth noting that, with certain modifications, the prefix *wa-* indicates a tribe, the prefix *u-* a district, the prefix *ki-* a language. Thus the Wagogo are the tribe, Ugogo is the district, and Kigogo is the language.

Religion.—The great majority of the natives are pagans with a very low type of religion. The medicine-men have often great influence, and it is desirable to keep them under supervision, as most tribes make war-medicine before going on an expedition. In a considerable number of the tribes there are certain trees which are sacred to the dead, and these should always be respected, as otherwise trouble is likely to ensue. In the chapter which deals with supplies there will be found references to the places where one must be careful to avoid these trees in the collection of fuel (see pp. 247–70).

The number of Mohammedans in German East Africa is comparatively small. Out of 7,500,000 natives not more than 300,000 are Mohammedans, and among these are included a considerable number who merely observe certain rites and whose connexion with Islam is very superficial. Most of the Mohammedans are found on the coast, and also in Usambara, Usagara, and Khutu.

European missionaries have done a good deal for the natives in education and medicine, and also in improving the native methods of agriculture. There are German Protestant missions in Tanga, W. Usambara, Ruanda, Uzaramo, Konde, Uhehe, Unyamwezi, Nyasa, Kilimanjaro, and Meru. The Seventh Day Adventists have three stations in the Pare mountains. Before the war there were English mission stations in the hinterland of Tanga, in Usagara, and at Nasa on Victoria Nyanza. In 1914 there were English mission stations (belonging to the University Mission of Central Africa) at Magila (head-station), Korogwe, Mkuzi, Msoswe, and Umbe ;

also near Lake Nyasa, and in the Yao country, N of the Rovuma. There are Roman Catholic missions in the Districts of Bagamoyo, Morogoro, Dodoma, Tanga, Wilhelmstal, Moshi, Dar-es-Salaam, and Lindi. The 'White Fathers' are stationed in Unyanyembe, S. Nyanza, and Tanganyika.

A short account of the tribes in the different districts is appended, indicating their numbers, weapons, military traditions, and relation to the German Government, together with notes on their language, houses, and agriculture. It describes conditions which existed about 1910.

I. DISTRICT OF

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).¹</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
1. WASHAMBAA ; in the mountains of West Usambara : thickly settled near, Mlalo, Mlola, and Bumbuli.	53,700 (10,740)	Muzzle - loaders, stamped in District 2,014 ; many unstamped. Short spears, poisoned arrows and bows. Short swords. Smiths everywhere. Iron weapon parts got from the Wajagga.	Break down on steppe. Not much good at fighting. Conquered by the Wakilindi, now the ruling class. Always fled before Masai attacks. Internal dissensions in the past.
2. WAMBUGU ; in West Usambara, mixed with Washambaa ; also at the N. end of the Pare mountains.	about 2,000 (about 400)	As above.	Not warlike. Fled always before the Masai attacks, and hid themselves and their cattle.
3. WAPARE ; in the southern part of the Pare mountains and the north of the Usambara mountains ; thickly settled at Kihulio, Kiswani, and Gonya.	about 22,000 (about 4,400)	Muzzle-loaders, long knives and Masai knives. Bow and arrows (poisoned). Knobkerries.	Had formerly much to suffer from attacks of the Masai and the Wataita, from the robberies of the Wakilindi from Masinde, and from slave expeditions of the coast Swahili. Cowardly hill people, who go to pieces in the plains.
4. WAZEGUHA ; on the Mkomazi between Mombo and Korogwe, on the Pangani, and between these rivers.	9,000 (2,000)	See the Districts of Tanga, Pangani, and Bagamoyo.	

¹ These figures are very rough and at times clearly incorrect.

WILHELMSTAL.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
Attitude towards the German Government satisfactory. Its influence everywhere to be seen. Organized under Akidas and Jumbes by the Government. The Wakilindi have great influence over the Washambaa, being appointed Akidas and Jumbes. Magicians are in the country, but have little influence.	Kishambaa, differing from Kizeguha dialectically only. Swahili is understood by some people in every village.	Round clay huts, with thatched roofs. Lying in the open on the hills. The older villages often on inaccessible rocks and cliffs.	Diligent farmers. Principal food, bananas. Cultivation of maize, manioc, sweet potatoes, beans. Much cattle, sheep, and goats ; poultry and bee-keeping ; dogs and cats.
Organized under Akidas established by Government ; are nevertheless subjected to some small chieftains without influence. Their attitude so far friendly to Germans.	Kimbugu disappearing. Principal language, Kipare. Swahili understood.	Small villages of three to four large, round clay huts with grass or rush roofs, hidden in the bush. Fenced-in fields.	Cattle - rearers. Little cultivation (maize and beans). Have almost altogether adopted the manner of living of the Wapare.
At the beginning of the German rule, frequent trouble. Cave fights. Now peaceful. Influence of Government apparent everywhere. Under one Akida and several small Jumbes.	Kipare, called Chasu from one district (pure Bantu). Swahili is understood.	Scattered huts or hamlets of two to five, more rarely ten huts. On hill-slopes in middle of cultivated patches. Round huts with grass or banana roofs. Clay plastering. Half of the verandah (<i>barasa</i>) is shut off from the outside by a clay wall.	Farmers and cattle-breeders. Poultry and bees. Cultivation of maize, beans, sugar-cane, and tobacco.
	Kizeguha (Zigula). Swahili understood everywhere.	Formerly round hut exclusively, now rectangular buildings frequently found.	Diligent farmers. Cultivation of maize, manioc, millet, sweet potatoes. Poultry. Famed for their drunkenness.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
5. MASAI and WAKWAFI. Masai steppe and on the Mafi mountains. Lakes Bisiko and Manga more densely populated.	800 (160)	Masai : spears and shields. Wandorobbo and Wakwafi : bows and poisoned arrows.	See District of Moshi.
6. WAKAMBA and other small tribes. On the N. slope of the E. and W. Usambara.	500 (100)	Muzzle - loaders ; bows and arrows.	Immigrated from British East Africa.
7. IMMIGRANTS : (a) Indians. (b) Arabians. (c) Wanyamwezi. (d) Wazukuma. (e) Wairamba and other races.	200 30 3,500 4,000 1,000	Muzzle-loaders, or weapons from their own countries.	

II. DISTRICT OF

1. WASWAHILI (SWAHILI). In the whole District. Thickly settled on the coast and at trade centres.	7,538 (2,959)	Many muzzle-loaders ; number in District not known. Stamping was being carried out in 1911.	Shared in the Arab rebellion 1889-90. Unwarlike.
2. WANGAZIYA (Komore in Tanga).	50 (35)	A few muzzle-loaders ; no other arms.	
3. WANGUNYA. Chief settlement in Minyani, one hour from Tanga.	307 (148)	As above.	

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
See District of Moshi.	Kimasai. Swahili is understood.	Kraals of the Masai or the Wando-robo type.	Cattle-rearers. Food, meat and milk. No cultivation.
Shy and cunning. Subject (nominally) to Akidas and Jumbes. Otherwise not organized.	Kikamba, little Swahili.	Little round clay huts with grass roofs. Lying in the open on the Uмба Steppe.	Cattle - rearers ; little cultivation.
Believed loyal to the German Government. Absolutely under the influence of the Administration.	Swahili.	Arabs and Indians : clay houses with clay or corrugated iron roofing. The other races have houses like the Swahili, or as in their own countries. Incapable of defence.	Traders, agriculturalists, porters or labourers on the plantations.

TANGA.

Attitude to German Government now satisfactory. Under the influence of the Administration. Organized under Akidas and Jumbes.	Swahili.	Four-cornered clay huts, with roof of grass or palm-leaves. Incapable of defence.	Traders for the most part. Little agriculture.
They are thoroughly intermixed with the coast population. Attitude and organization as above.	Swahili.	As above.	Traders, ' boys ', cooks, craftsmen, &c.
As above.	Kingunya and Swahili.	As above.	Fishers and agriculturalists. Palm cultivation ; millet, beans, manioc. No cattle.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
4. WAZEGUHA ; in the SW. of the District, densely settled near Korogwe. The greater part of the tribe is in District of Pangani. Called Waruvu on islands in Pangani river.	1,873 (643)	Many muzzle-loaders. Throwing-spears, knobkerries, bows and poisoned arrows.	Formerly many internal fights over slaves and cattle-stealing. Repeatedly defeated and robbed by the Masai. Unwarlike. Mode of fighting: surprise attacks at dawn, or ambushes.
5. WADIGO ; on the coast as far as Yasin; mixed with the Wazegeju.	17,442 (5,379)	Muzzle - loaders. Bows and arrows, throwing-spears.	Formerly many fights with the Wazegeju, raiding for slaves and cattle. Always fled from the attacks of the Masai. Cowardly, unwarlike.
6. WABONDEI ; Bondei Land. Thickly settled to S. of Muheza (see District of Pangani).	14,720 (3,953)	Muzzle - loaders ; shortspears, poisoned arrows and bows.	Formerly wars with the Wadigo; sudden raids upon each other for slaves and cattle, towards morning; they are rather cowardly, not good fighters.
7. WASHAMBAA ; in the Usambara mountains; thickly settled northwards of Amani (see District of Wilhelmstal).	14,808 (4,532)	Muzzle - loaders ; throwing - spears, bows and poisoned arrows, knives.	Formerly there were internal wars. Sometimes they successfully resisted the attacks of the Masai. Their tactics are to drive off cattle to cover, then making sudden attack at dawn, or falling on enemy from ambush.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
Docile to the German Government. Influence of authorities everywhere. Organized under Akidas and Jumbes.	Kizeguha and Swahili.	Round huts with grass roofs, clustered in villages. Formerly fenced round as a defence against the Masai, now lying open. Incapable of defence.	Some cattle-rearing. Cultivation of millet, maize, rice, beans. Good porters. The Waruvu are also fishermen.
Lazy and indolent. Do not work on plantations. Docile to the German Government. Organized under Akidas and Jumbes.	Swahili and a little Kidigo.	Formerly round huts with grass roofs with deep overhanging eaves, and a palisade. Nowadays there are also four-cornered huts with very weak walls.	Fishers, hunters, and salt-refiners. Palm cultivation ; cultivation of millet, maize, 'shirokko', manioc, sweet potatoes. Little cattle. Much palm wine.
It is difficult to stir them up to work on the plantations. But they are diligent agriculturalists, organized under Akidas and Jumbes. Influence of the authorities everywhere. They willingly obey the orders of the Akidas and Jumbes.	Kibondei. The younger people for the most part speak Swahili.	Formerly round huts with grass roofs and verandahs (<i>barasa</i>) for the housing of sheep and goats. Nowadays there are also four-cornered clay-huts. Cattle are kept in a special cattle-yard, fenced in by a palisade. The houses are not enclosed, and are not capable of defence.	Diligent agriculturalists. They cultivate more than they require—millet, maize, manioc, &c. Much poultry. Sheep and goats. Tappers of indiarubber trees. Bad porters.
A shy mountain people. Can only be used for light tasks. Docile under German rule. The influence of the Administration is increasing. They are now organized under Akidas and Jumbes. The former sultans are deposed, and live among their own peoples, having no influence.	Kishambaa. Little Swahili.	Round huts with grass roofs, united into big villages. They lie unenclosed for the most part, on the mountain summits. Their banana groves are in the valleys. They are not capable of defence.	Agriculturalists. Cultivation mainly of maize, bananas, sugar-cane, tobacco. They are also cattle-rearers ; bullocks and many goats. Two to four harvests each year.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
8. WANYAMWEZI. Their villages are situated throughout the District. They are especially numerous near Tanga, on the railway, in small holdings (<i>shambas</i>) (see Tabora).	7,600 (5,961)	Many muzzle-loaders ; no other arms.	See District of Tabora.
9. WAZEGEJU ; on the coast northwards from Tanga, and on the Uмба steppe. Intermingled with the Wadigo. Densely settled on peninsula of Gomani.	6,571 (1,983)	Many muzzle-loaders, bows, arrows, spears.	Fights with the Wadigo. Slave and cattle stealing. Always fled before the attacks of the Masai. Unwarlike. Their mode of fighting : surprise attacks at dawn.
10. VARIOUS NATIVES, among them, the WATAITA in Bwiti.	3,902 (1,682)	Bows, arrows, long knives.	
11. IMMIGRANTS : (a) Arabs. (b) Washirazi. (c) Indians. (d) Chinese. (e) Goanese.	453 729 792 6 101	Muzzle-loaders.	Arab rising of 1889-90.

III. DISTRICT OF

1. WASWAHILI ; on the coast.	11,447 (2,000)	Few muzzle-loaders. (In the whole District 4,100 muzzle-loaders stamped. Distribution among the tribes unknown.)	Took part in the risings under Bwana Heri (1889-90) and Bushiri (1889). Later quiet.
2. WAZEGUHA (Wazigula) ; in Uze-guha : thickly settled	39,568 (8,000)	Muzzle-loaders (see 1). Few bows and arrows and spears.	Before installation of German rule, many civil wars amongst the tribes of the District. In-

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
Sec Waswahili.	Kinyamwezi and Swahili.	The same as Waswahili.	Agriculturalists, porters, farm-workers. No cattle.
Shy of Europeans. Influence of the Administration increasing. Organized under Akidas and Jumbes.	Kizegeju. They understand Swahili.	Formerly like the Wadigo. Large villages of round huts with grass roofs, or four-cornered huts with walls and roof of palm leaves. Nowadays more solid buildings.	Fishing, hunting ; some agriculture and stock-rearing. Only a few cattle. Palm culture, and cultivation of maize, manioc, millet, &c.
Immigrated from the British Colony. Docile under Germans. Organized by Government.	Kitaita, also Kizegeju and Kidigo. Swahili is understood.	Round huts smeared with clay, and grass roofs. Unenclosed. Not capable of defence.	Stock-rearing and agriculture.
Apparently loyal to the Government. Politically insignificant compared to the numerous European population.	Swahili.	Four-cornered clay huts with roofs of clay or corrugated iron. In Tanga, some in European style. Incapable of defence.	Traders and craftsmen.

PANGANI

Submissive.	Swahili.	Square huts with clay-plastered walls and straw and grass roofs, rarely palm-leaf roofs. Incapable of defence.	Traders, mechanics, 'boys', proprietors of shops and crofts.
Restless. District divisions subject to Akidas, to these the Jumbes are	Kizeguha. Swahili understood everywhere. In-	Old form of the Uzequha hut is round with pointed	Mostly agriculturalists and stock-rearers. Cultivate

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
at Mgambo, Mbegu, Ruguru-Maka (see District of Bagamoyo).		Shields unknown. Go mostly unarmed. Weapon-smiths not to be found. Arms bought from the Wanyamwezi, seldom from Masai.	significant risings of 1895 settled by Lt. Böhmer's expedition peacefully. Took no part in 1905-6 rising.
3. WABONDEI ; in the Bondei valleys to the N. of the Pangani; everywhere thickly settled (see District of Tanga).	4,922 (1,000)	See 1 and 2.	See 2.
4. WANGURU ; in the Nguru mountains. Thickly settled at Mgera.	10,820 (2,500)	See 1 and 2.	It was necessary to take forcible measures against Akida Mtite of Kimbe in 1897. Since then peaceful.
5. MASAI ; in the Masai steppe, N. of Mgera - Handeni - Zinden road. Thinly settled.	about 3,000, but only approximately estimated. (500)	No guns; bows and arrows, spears, shields. Own smiths.	Not actively warlike. See District of Moshi.

* * Wazeguha = people of the plains.

Wabondei = people of the village.

Washambaa (Washambala) = people of the mountains.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
subordinate as headmen in the villages. Power of the Jumbes slight. Magicians, on the other hand, numerous and influential. Tribal organization slack and insignificant. Not very good porters.	interpreters not necessary.	straw or grass roof. Walls of tree-trunks, plaited with branches and plastered with clay. New buildings rectangular like those of the coast people, with gable roof and verandah covered with grass, reed, or palm leaves. Now undefended, former euphorbia hedges disappearing. Huts lie separate, not capable of defence. Villages rarely enclosed.	millet, maize, beans, peas, sweet potatoes; on the coast, coconut trees. Latterly numerous cotton fields planted. Live stock : Oxen 9,110 Cows 24,311 Calves 7,662 Goats 41,083 Sheep 35,455 43,658 Few donkeys ; much cattle export to Zanzibar.
Compare 2. Now willing and diligent.	Kibondei, almost like Kizeguha. Swahili understood everywhere. Interpreters not necessary.	See 2. The roofs reach almost down to the ground.	See 2.
See 2.	Language almost same as Kizeguha. Otherwise the same as 2.	See 2.	See 2.
Submissive.	Kimasai, but Swahili often understood. Interpreters advisable.	Round huts plastered with cowdung; arranged in circular kraals, surrounded by thorn hedges. More capable of defence than most villages.	No agriculturalists, only stock-rearers. Live stock not ascertained. Food chiefly buttermilk.

IV. DISTRICT OF

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
1. WASWAHILI ; along the coast. Very numerous in Bagamoyo and Saadani.	about 8,000 (about 1,600)	4,000-5,000 muzzle-loaders in the whole District.	Took some part in the insurrections under Bwani Heri, 1889-90. Later quiet.
2. WAZARAMO ; inhabitants of District of Dar-es-Salaam. Extending to south of the Kingani into the District of Bagamoyo.	13,000 (about 2,600)	See Dar-es-Salaam.	
3. WADOE ; between the lower courses of the Wami and Kingani. Settled thickest on the lower Kingani and south of Bagamoyo.	9,000 (1,800)	Muzzle - loaders, throwing - spears, bows and poisoned arrows; poison obtained from the Wazeguha, or can be made from the plants 'Msageti' and 'Kuliga'.	A sub-tribe of the Wazaramo. Once summoned to help the Shaha against the Wakamba, defeated them, and established themselves on the Wami. Not good in warfare, but cunning and secretive. Manner of warfare: surprise attacks in the bush.
4. WAKWERE ; in the region Mindu.	7,500 (1,500)	See above.	Nothing known of earlier wars. Not much use as fighters. Mode of warfare: same as the Wadoe.
5. WAKAMI ; principally in District of Morogoro. In District of Bagamoyo, north of the Ngerengere, where it joins the Ruvu.	about 1,500 (300)	See District of Morogoro.	
6. WAZEGUHA ; on the Wami River, and as far up as the Pangani; most thickly settled in the	about 19,000 (about 4,000)	Many muzzle-loaders, and about 2,000 of them are stamped. Former weapons: spears; bows and	Wazeguha are more warlike than the neighbouring tribes. Formerly carried on many feuds amongst themselves and with their neighbours. Most

BAGAMOYO

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>Submissive to German rule. Absolutely under influence of the Administration. No tribal organization.</p> <p>See Dar-es-Salaam.</p>	Swahili.	Rectangular clay huts, grass-roofed. Not capable of defence.	Traders, mechanics, 'boys', agriculturalists.
<p>Of no political importance, formerly under chiefs, called Mweni. Now organized by the Government under Akidas and Jumbes, yet these have no secure influence. Influential magicians are still carrying on their business in some cases.</p>	In language related to the Wazaramo. Much Swahili is spoken.	Rectangular clay huts, grass roofs. Isolated villages with antiquated palisades. Little capable of defence.	Agriculture. Some stock-rearing. Cultivation of Guinea-corn, maize, sesame, ground-nuts, beans, pumpkins, cucumbers, manioc, sweet potatoes, and rice.
<p>Submissive to German rule. Organized by Government under Akidas and Jumbes.</p> <p>See District of Morogoro.</p>	Chiefly Swahili.	Rectangular clay huts, grass roofs ; joined up into a village. Not defensible.	Agriculture. Moderate amount of stock-rearing. Cultivation of millet, maize, cotton, vegetables, &c.
<p>Not really dangerous, but restless, and from their earlier habits are inclined to intrigue and revolt. A nephew of</p>	Kizeguha, akin to Kinguru. Swahili widely spoken.	Round clay huts, grass roofs. Lower part, dwelling-place ; upper part, store-room. The huts are	Agriculturalists and stock-breeders. Cultivation of maize, Guinea-corn, beans, sweet potatoes,

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
Pangani District, in the regions of Mbegu, Ruguru, Mgambo, Maka.		arrows in leather quivers ; swords in leather scabbards. These are being superseded by muzzle-loaders. Weapons were smuggled in from Zanzibar. Kipumbwe, on the coast, six hours south of Pangani, is considered the principal smuggling place. Possibly breech-loaders might be brought in too.	powerful chief was Bwani Heri. He often fought successfully against his neighbours, and in 1882 defeated the Sultan of Zanzibar. In 1890 there was an unsuccessful attack by Wissmann's troops against Bwani Heri's stronghold Mlem-bule. He had joined the Bushiri rising against the Germans. It was taken by storm soon after by Wissmann's troops and Bwani Heri had to submit. 1890 : murder of Lieut. Kiel-meyer near Muhenna. Then Uze guha was garrisoned by Count Fugger for three months. They did not take part in rising of 1905-6. Ferment in the country quelled by a military demonstration in 1909. They used to defend themselves in their fortified villages.
7. WANGURU ; in Nguru mountains ; most thickly settled in the south.	18,000 (about 3,600)	Muzzle - loaders, spears, bows and arrows.	Former wars with Masai and Wazeguha. Not very warlike. Predominance of mission influence.
8. WANYAMWE-ZI ; in isolated settlements in the District.	about 1,500 (about 300)	See District of Tabora.	
1. WALUGURU ; Uluguru range. On the slopes to height of 6,000 feet.	45,031 (9,000)	26 muzzle-loaders ; spears.	Confined themselves to guarding their mountains with success against the Mafiti, Wazeguha, and occasionally also the Wa-hehe. Stubborn. They roll down crags and rocks from the hills.

V. DISTRICT OF

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>the powerful chief Bwani Heri was banished sixteen years ago, and lives with the rest of his relations in Zanzibar. Tribe's present organization has been introduced by the Government. The main divisions are under Akidas, and the villages under Jumbes. There are many magicians.</p> <p>Submissive attitude towards German rule. Tribes organized by the Government under Jumbes and Akidas.</p> <p>See District of Tabora.</p>	<p>Kinguru akin to Kizeguha. Swahili is understood.</p>	<p>grouped in villages. The former fences of palisading have almost entirely disappeared ; also the euphorbia hedges. Latterly some square clay huts have been built like the Waswahili's. Could not be made fit for defence.</p> <p>Villages of round huts, partly enclosed.</p>	<p>manioc, pumpkins, cucumbers, sesame, ground-nuts, tobacco.</p> <p>Agriculture and some stock-rearing. Chiefly maize, tobacco, bananas, and much rice.</p>

MOROGORO.

<p>Altogether submissive. Civilized like the other tribes of the District. Pay taxes. Work for Europeans. Influence of the Jumbes is not great.</p>	<p>Kiluguru. The men also speak Kikami and mostly also Swahili.</p>	<p>N., S., and W. Uluguru, round huts with grass roofs. E. Uluguru, long-shaped four-cornered houses with wooden walls (boards) and banana roofs.</p>	<p>Maize, bananas, manioc, sweet potatoes. In E. Uluguru much mountain rice also. In W. Uluguru European potatoes also. Many goats. In Mohoro 4,500 oxen, 31,400 head of goats and sheep.</p>
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<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
2. WAKAMI ; Ukami region.	23,481 (4,700)	334 muzzle-loaders, otherwise spears.	Hard-fought wars against Wazeguha, to whom they were subject ; later against the Mafiti, who were defeated by the Wakami. Good soldiers in the Protectorate troops and police.
3. WAZEGUHA ; near Morogoro and Mikese, region of Rudeva, and by the Wami.	1,835 (360)	93 muzzle-loaders ; spears.	Warlike. Came as conquerors into the land under the ancestors of Kingo, who is their over-chief.
4. WAZARAMO ; by the Ruvu, along the frontier of Dar-es-Salaam.	1,108 (300)	1 muzzle-loader ; poisoned spears and arrows.	Cowardly. Much plundered by the Mafiti.
5. WAKHUTU ; in Khutu.	14,105 (3,000)	115 muzzle-loaders ; spears, some of them poisoned.	Carried on many wars with the Mafiti, often successfully.
6. WABUNGA ; in Kisaki.	1,063 (300)	Spears (fire-arms brought in in the rising of 1905-6).	Warlike. Belonged to the Mafiti. In rising of 1905-6 were doubtful.
7. WASAGARA ; in Usagara.	17,424 (3,800)	82 muzzle-loaders (many fire-arms brought in in the rising of 1905-6) ; spears.	Carried on many defensive wars against the Mafiti and Wahehe, sometimes with success. Inclined to be warlike. In rising of 1905-6 took an important part.
8. WAKAGURU ; in Kaguru.	2,807 (560)	6 muzzle-loaders ; spears.	Unwarlike. Formerly small wars with the raiding Wakamba.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
Quite civilized. Good, willing labourers. Many Mohammedans. Influential Jumbes ; one more important chief, Sultan Kingaro in Kinole, who has not much influence (1910).	Kikami. All men speak Swahili also.	Round huts with grass roofs.	Maize, millet, bananas, manioc, sweet potatoes. In E. Ukami rice also. A good many goats.
Civilized, not easy to manage, have perpetual alliance with Uzeguha. Several influential men of importance—Sultan Kingo at Morogoro, Bibi Simbamwene at Kingolwira (half-sister of Kingo's), Waziri at Rudeva (1910). All Mohammedans.	Kizeguha and Kikami. All men speak Swahili also.	Round huts with grass roofs.	Millet, maize, rice. Not many goats ; few oxen.
Difficult to induce them to work. Thieving propensities. Jumbes without influence. Many Mohammedans.	Kizaramo and Swahili.	Medium-sized to small but well-built rectangular houses (<i>banda</i>) with grass huts.	Millet, maize, manioc ; few goats.
Submissive. Willing labourers, acquisitive. Jumbes with good influence. Many Mohammedans.	Kikhutu. Men also speak Swahili.	Roomy, well-built rectangular houses (<i>banda</i>) with grass roofs.	Millet, maize, much tobacco ; few goats.
Difficult to handle. Work little. Influential Jumbes.	Kikhutu. Men speak Swahili also.	See 5.	Millet, maize.
Submissive, but difficult to count on. Work for Europeans. Much <i>pombe</i> drinking. Jumbes have not much influence.	Kisagara. The men generally speak Swahili also.	Round huts, strongly built, with grass roofs.	Millet, maize ; many goats ; not many oxen.
Submissive. Somewhat shy. Work to certain extent for Europeans. Jumbes have little influence.	Kikaguru. The men generally speak Swahili.	See 7.	Maize, millet, bananas, beans ; a good many goats ; some cattle-rearing.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
9. WAMAKUA ; District of Tendiga half day's journey SE. from Kilosa, on the Wami.	2,867 (570)	62 muzzle-loaders ; spears.	Warlike. Good hunters and shots. Auxiliaries in German service in rising of 1905-6.
10. WANGURU ; District of Mfomero, on the southernmost slopes of Nguru.	756 (150)	2 muzzle-loaders ; spears.	Unwarlike.
11. WAKAMBA ; region of Magubugubu, on the River Mkundi (tributary of the Wami). Immigrants from British East Africa.	503 (100)	Poisoned spears and arrows.	Warlike. Live by hunting.
12. WANYAMWEZI ; migrated to the Masanze country, SE. of Kilosa, from Tabora District.	1,017 (200)	46 muzzle-loaders ; spears.	See Tabora District.
13. WAZANGU ; migrated to Tendiga, Chanzuru-Ilonga, 2½-3 miles SE. and E. of Kilosa, from Uzangu.	1,425 (280)	22 muzzle-loaders ; spears.	Of warlike disposition.
14. WAHEHE ; Izega on the Ruaha (Iringa border) and Ledingombe on the SW. frontier of the District.	836 (160)	4 muzzle-loaders ; spears.	Warlike. Took part in the raids of the Wahehe and in the rising of 1905-6.
15. WADUNDA ; on the Ruaha in the Widunda mountains.	5,007 (1,000)	2 muzzle-loaders ; many weapons were taken away in the rising ; spears.	Warlike. Formerly made successful defence against Mafiti and Wahehe. Roll down boulders and stones. Take refuge in times of war in Ligunge mountains and hide women, children, and cattle in neighbouring caves. Rose in 1905-6.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
Submissive. Too proud to work for Europeans. Influential Jumbes.	Swahili.	Roomy, well-built, rectangular houses, with grass roofs.	Millet, maize, bananas ; goat rearing fairly extensive.
Submissive. Difficult to accustom them to work for Europeans. One Jumbe, without influence.	Kinguru ; also speak Swahili.	Round huts, few of them well built.	Millet, maize, bananas ; fair number of goats, few oxen.
Submissive, but not easy to manage. Cannot be accustomed to work for Europeans. One influential Jumbe.	Kikamba and Swahili.	Moderately well-built rectangular houses, with grass roofs.	Live almost entirely by hunting ; a good many goats ; few oxen.
Obedient. Good farmers and cattle-rearers. Good workers with Europeans.	Kinyamwezi and Swahili.	Roomy, well-built, round huts ; grass roofs.	Millet, maize, rice, sweet potatoes, earth-nuts ; many goats, few cattle.
Obedient. Good farmers and stock-rearers. Good workers for Europeans.	Kizangu and Swahili.	Well-built, roomy, rectangular huts ; grass roofs.	Millet, maize, rice, sweet potatoes ; many cattle and goats.
Obedient, but not easy to manage. No plantation workers.	Kihehe. Men speak also Swahili and Kisagara.	Well-built, roomy native compounds (<i>tembes</i>).	Maize, millet, beans ; fairly many cattle and goats.
Obedient : difficult to manage. Difficult to accustom to work with Europeans.	Kisagara. Some of the men speak Swahili.	Round huts, roomy and well built ; grass roofs.	Maize, millet, rice, manioc, sweet potatoes, beans.

VI. DISTRICT OF

<i>Name of tribe; seat of tribe; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders; other arms.</i>	<i>Past wars; capabilities; methods of warfare.</i>
1. WASWAHILI and vassals: Dar-es-Salaam town and along the coast.	about 18,000 (about 3,600)	Muzzle - loaders, arrows, bows, spears. Smuggling of arms probable.	Unwarlike. Former risings under leadership of the Arabs. Rising in 1905 quickly suppressed. No characteristic method of fighting. Country is suitable for surprises.
2. WANDENGEREKO: in southern interior of the District; thickly settled near Mkamba.	about 43,000 (about 9,000)	A few muzzle-loaders, arrows, bows, spears.	See 1.
3. WAZARAMO: in northern interior of District.	about 130,000 (about 26,000)	Poisoned arrows, bows, spears.	Unwarlike. Rising in 1905 put down by prompt action.
4. ARABS, INDIANS, BANYANS, SOMALI: thickly settled in Dar-es-Salaam town, and scattered about along the coast.	about 2,600 (about 500)	Muzzle-loaders.	

VII. DISTRICT OF

1. WARUFIJI: mixture of coast negroes and inhabitants of interior. In the delta and the Rufiji valley. Thickly settled at Ndundu,	about 40,000 (8,000)	About 300 muzzle-loaders in District, of these 150 in the immediate vicinity of Mohoro. Small spears; axes.	Formerly many quarrels amongst each other. Frequently conquered by the Waugoni (Mafiti). Last decisive fight at Tindwa on the Rufiji, when the Warufiji were beaten, but inflicted such severe losses
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DAR-ES-SALAAM.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
Quiet ; no tribal organization. Akidas and Jumbes placed in power by Government.	Swahili.	Rectangular mud huts with grass or palm roofs, united into hamlets. Capability of defence poor.	Agriculture, trade, fishing Poultry, goats, fish, rice, millet, maize, manioc, sweet potatoes, peas, ground-nuts, coconuts, mangoes, beans. Few cattle.
Peaceful but shy. A few remains of former tribal organization are still to be found ; otherwise Akidas and Jumbes placed in power by Government.	Kindengereko. Swahili is understood everywhere and spoken a good deal.	See 1.	Agriculturalists, traders, craftsmen. Millet, maize, manioc, sweet potatoes, beans, ground-nuts. Cattle and donkey rearing impossible on account of tsetse.
Submissive. Subject to Akidas and Jumbes put in by the Government. The influence of their own former tribal chiefs, the <i>Pazis</i> , almost entirely vanished.	Kizaramo. Swahili is spoken and understood everywhere.	Rectangular mud huts. Separate huts with grass roofs, not capable of defence.	Agriculture, millet, maize, manioc, sweet potatoes, beans, ground-nuts. Very little cattle on account of tsetse.
Quiet.	Arabic, Hindustani. Swahili everywhere spoken and understood.	Stone or mud houses. Tiled and corrugated iron roof, with good capability of defence.	Merchants, traders. Oxen, goats, poultry, fish, rice, maize, coco - nuts, and mangoes.

RUFJI.

The inhabitants of the Upper Rufiji took part in 1905-6 rising. The others remained loyal to the German rule. Influence of Government remarkable everywhere,	Swahili principal language. In the northern part also Kindengereko, in the southern part Kimatumbi.	Square huts with clay or grass walls and palm-leaf roofs. In the valleys collected together into places, dispersed in the mountains. Not	Fishermen and agriculturalists. Cultivation of maize, rice, millet, beans, manioc, bananas, peas. On the coast and in the hills
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<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
Mohoro, Kondoni, and Mtanza.			on the Mafiti, that they did not press farther. Capable fighters.
2. WAMATUMBI : related to Wangindo. In the Matumbi and Kichi mountains, see Kilwa District. In the Mohoro District thickly settled on the Ketora mountain and Kirungu-rungu.	16,000 (3,000)	Occasional muzzle-loaders. Fire-arms taken away after the rising. Small spears, axes, knives.	• Warlike tribe. Raids into neighbouring districts were always the order of the day. The Warufiji particularly had much to suffer from them. Have caused the Government continual expeditions. Rebelled in 1905-6 and were only conquered after severe fighting.
3. WADENGEREKO : mostly settled in Dar-es-Salaam District. In Mohoro isolated on the N. frontier of the District.	16,000 (3,000)	See District of Dar-es-Salaam.	
4. WAPOGORO : sporadic on the Rufiji round Kovoni and on the Ngarambi.	1,000 (200)	Spears. Can use poisoned arrows and bows, but do not carry them in peace time.	See District of Mahenge.
5. WANGINDO : at Mohoro, Ngaru, and on the Luhohi.	1,000 (200)	Poisoned arrows and bows ; spears.	See District of Kilwa.
6. WAZARAMU : mostly settled in District of Dar-es-Salaam. In Mohoro District scattered on the N. border.	1,000 (200)	As above.	See District of Dar-es-Salaam.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>but great difficulty in getting Warufiji to work with Europeans. Government organization. Akidas and Jumbes. Influence of magicians here and there.</p> <p>Refuse absolutely to acquiesce in German rule. Have been organized under Akidas and Jumbes, pay taxes, but are inaccessible to any other influence. At the approach of a European they leave their dwellings and hide in the bush.</p> <p>See District of Dar-es-Salaam.</p> <p>See District of Mahenge.</p> <p>See District of Kilwa.</p> <p>See District of Dar-es-Salaam.</p>	<p>Kimatumbi. Swahili understood everywhere.</p>	<p>fenced in and not capable of defence.</p> <p>Rectangular clay huts with grass roofs. Scattered on the highest tops of the mountains. At the mouths of the valleys opening on to the Rufiji they are grouped into villages. Not enclosed and not capable of defence.</p>	<p>palm trees. Little live stock.</p> <p>Agriculture and cultivation as above. Principally millet. No live stock.</p>

VIII. DISTRICT OF

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
1. WAMATUMBI: in the Matumbi Hills (sub-district Kibata)	22,542 (about 4,500)	Spears, axes, bows and poisoned arrows. A few firearms. Smuggling of powder from Mohoro, Samanga and Kilwa. Poison for arrows from the Wangindo.	Hard-headed mountain-folk, peaceably-disposed for the most part. In the rising of 1905-6, they were stirred up by sorcerers and overthrown after hard fighting. A powerful, strong race. No specially typical methods of fighting. They attack in small parties suddenly from the bush. They would probably defend their dwellings, situated on the steep heights, and would make a surprise attack in the bush. Some large rock-caverns were used in the rising, and were discovered in 1909 through the treachery of a Matumbi man.
2. WANGINDO: in the sub-district of Liwale, the middle Mavuji and Mbemkuru and between the two. The river-valleys are densely populated.	27,993 (about 5,600)	A few firearms. Spears ; many bows and poisoned arrows, in the use of which they are very expert.	Warlike, crafty and underhand. Before the rising of 1905-6 they were despised, and many were carried off by the Wangoni to Ungoni ; in the rising they played a great part (storming of Liwale), and then took the lead in Ungoni.
3. WAPOGORO : country round Madaba ; settled mainly in Madaba and the places to the S. of it.	1,299 (about 260)	A few firearms. Spears, axes, bows and poisoned arrows. Poison obtained from the Wangindo.	A peaceful agricultural people. In the rising of 1905-6 they were worked up by witch-doctors, but quickly subdued. They have no typical methods of fighting ; probably they would make surprise attacks in the bush. No fortified

KILWA.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>Since the revolt of 1906 was quelled, they have given no special difficulties. They are diligent cultivators and willing porters. The Jumbes are in part set up by the Government, in part chosen by the people, and confirmed by the Government. They are apparently without influence. Some of the Wamatumbi are still under the influence of witch-doctors. There are no tribal chiefs.</p>	<p>Kimatumbi. Swahili is generally known.</p>	<p>The huts are built of rough wood, bamboo, and bark ; they are rectangular, with gabled roofs, daubed with earth and covered with grass ; scattered about in the valleys and on steep heights. They are not adapted for defence.</p>	<p>Agriculturalists pure and simple ; poultry, eggs, millet, maize, beans, peas, manioc, bananas, pumpkins, cucumbers ; some rice. A few goats. Tsetse rare. No donkeys. Average holding to each hut 4-5 acres of cultivated ground.</p>
<p>Since 1905-6 they have presented no difficulties, but they are suspicious and must be treated with caution. They are diligent cultivators and, in Dondeland, rubber tappers. The Jumbes are partly foreigners, introduced by the Government, apparently without influence. There are no more important chiefs. The Wangindo are influenced by witch-doctors.</p>	<p>Kingindo. Swahili is usually known ; where not generally known, it is spoken by some individuals.</p>	<p>Rude huts made of rough wood, plaited bamboo, bark, with gabled roofs, covered with grass or reeds, often without clay-daubing.</p>	<p>Agriculturalists pure and simple ; hens, eggs (difficult to obtain in Liwale subdistrict), millet, maize, beans, peas, lentils, pumpkins, cucumbers, manioc. In the rubber districts, average holdings 2-3 acres of cultivated land ; in the regions poor in rubber, 4-5 acres.</p>
<p>Since 1905-6 they have been easy to manage ; they are diligent cultivators, apparently not suited for portorage. The Akida has a moderate amount of influence ; he is a foreigner.</p>	<p>Swahili is fairly widespread ; interpreters are not necessary.</p>	<p>Huts as under 1 and 2, often with palisades round them, to prevent molestation by lions ; there are often ten huts within the enclosure. They are</p>	<p>Varieties of food-stuffs as above. A few goats, poultry, eggs. No cattle or donkeys, because of the tsetse-fly. Average holding, 4-5 acres of cultivated land.</p>

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
4. Mixed population:			places. There are hiding-places in the thick bush.
(a) Wamwera.	8,015	A few firearms, spears, axes, bush-knives. Bows and poisoned arrows are for the most part only found among the Wangindo. It is easily possible to smuggle in weapons and powder at the more distant coast places.	An unwarlike population, collected together as they fled before the Wangoni. The populations on the coast took scarcely any part in the rising of 1905-6, while the tribes dwelling further inland were stirred up by witch-doctors. In future risings they would presumably make surprise attacks in the bush. There are no fortified places. They have hiding-places in the thick bush.
(b) Wayao.	10,338		
(c) Machinga.	5,795		
(d) Wangoni.	459		
(e) Wabisa.	391		
(f) Wanyasa.	10,848		
(g) Wazaramo.	28		
(h) Wamakua.	302		
(i) Wanyamwezi.	65		
(k) Warufiji.	187		
(l) Waswahili.	3,816		
(m) Wambwera.	3,156		
(n) Wamakonde.	284		
(o) Wanindi.	366		
(p) Wakomanga.	85		
(q) Wazamanga.	271		
(r) Mzilazili.	534		
(s) Wamalindi.	92		
Total	45,032		
Very much inter-mixed, along the coast especially.	(about 9,000)		

NOTE.—Before the rising of 1905-6, 5,282 muzzle-loaders were registered. When the tribes were disarmed, about 2,000 firearms were surrendered. There remain 3,282. In

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>The influence of witch-doctors is great. There is no special tribal organization. The Jumbes are chosen by the people and confirmed by the Government; they have not much influence.</p> <p>The population as a whole offers no difficulties. The Akidas and Jumbes have not much influence. There is no tribal organization. Islam widespread.</p>	<p>Swahili widespread on the coast and the interior side by side with tribal dialects.</p>	<p>not adapted for defence.</p> <p>Huts as under 1-3, of better construction on the coast; built of stone in places. They are not adapted for defence.</p>	<p>Varieties of corn as above. Much maize and 'mtama' (sorghum) in Yingo and in Mtashakama. Much rice N. of Kiswere, much manioc in Mikumbi. Stock-farming only here and there, on account of the tsetse-fly.</p>

the register of firearms 379 muzzle-loaders are noted. In the rising of 1905-6 the attack was made with firearms and arrows; a spear attack was not customary.

IX. DISTRICT OF

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
1. WASWAHILI ; coast dwellers, thickly settled between Mikindani, Zudi, and Lindi.	about 66,000 (10,000)	Muzzle-loaders.	Unwarlike.
2. WAMACHINGA ; coast people on the Mchinga Bay.	1,000 (200)	Muzzle - loaders, bows, poisoned arrows. Smuggling of firearms and powder probable.	Unwarlike.
3. WAMAKONDE ; Makonde plateau, between the Rovuma and the Lukuledi.	about 130,000 (22,000)	Many muzzle-loaders, spears, bows, axes, poisoned arrows.	Not had many wars. Partially loyal in the last rising, viz.: Newala, Nawanga, Akida Chikambo. Surprise attacks from the dense bush. Attacks by night on camps. They give way if attacked, but follow marching columns under cover of the bush and form ambushes.
4. WAMWERA ; Mwera plateau, between Lukuledi and Mbemkuru, and rund Ilulu.	about 40,000 (6,000)	Muzzle - loaders, spears, bows, poisoned arrows.	Not really warlike. Many defensive wars against the Wayao and Wangoni. Joined in the last rising. In 1908 traces of a new rising, suppressed in good time. Surprise attacks and ambushes from bush. Do not attack in open.
5. WANDONDE ; on the middle and upper Mbemkuru as far as the Lumesule, near	6,000 (1,200)	Muzzle - loaders, bows, poisoned arrows.	Unwarlike. Took little part in the last rising. Night attacks and ambushes.

LINDI.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
No real tribal organization.	Swahili	Roomy rectangular huts. Clay or <i>makuti</i> roofs or corrugated iron. Many windows and doors that can be made fast. Defensible.	Farming : coco-nuts and mangoes. Traders. Goats and poultry. Much rice, millet, beans, peas, manioc, fish, coco-nuts, mangoes, bananas. Goats and sheep in small flocks. No donkeys.
As above.	Swahili mixed with Kidonde.	Rectangular clay huts, straw roofs ; not defensible.	Farmers and traders. Goats, fish, rice, millet, mangoes, bananas ; few goats and sheep. No cattle-rearing possible owing to tsetse-fly.
Have been quiet since the sub-district station Newala was established. No real tribal organization.	Kimakonde. Swahili is a good deal understood.	Poor clay huts, straw roofs. No military value ; not defensible.	Farming : white millet, maize, beans, manioc. Cattle and donkeys cannot be reared owing to tsetse.
The people are still suffering under their heavy losses in the Majimaji rising, and are now disposed to be quiet. The Akidas installed by Government are loyal. No tribal organization.	Kimwera. Swahili is understood nearly everywhere.	Square clay huts, straw roofs. Of no military value ; not defensible.	Farming : white millet, maize, beans, manioc, millet-flour. No live stock.
Peaceful and docile. The Wandorido on the Mbemkuru are reinforced from the north.	Kidonde. Wandorido on the coast understand Swahili. On the	Rectangular clay huts, straw roofs ; not defensible.	Farming : millet, maize, manioc, field-produce ; no cattle, sheep, or goats.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
the former settlement of Mesule, with an enclave to the west of Kyonga on the lower Rovuma, and on the Bay of Mchinga. Mbemkuru is thickly settled.			
6. WANGONI : on the upper Mohezi (Muhuwezi) and Luwira in the north-west corner of the District. On the Lumesule round Mesule; at the sources of the Mbemkuru; at Tunduru, to the north of Katewere; on the central Rovuma.	12,000 (2,000)	Muzzle - loaders, spears, bows and arrows, clubs, axes.	Warlike: a long warlike past. Many wars with the Wayao, Wamwera, and Wangindo. They are very much mixed with the Wangindo. Brave, feared by other tribes, a strong powerful tribe. Good hunters. Surprise attacks and attacks in the open; two lines, the first armed with knobkerries, the second with spears. After the enemy has been felled by the knobkerry, the spearman finishes him.
7. WANGINDO : scattered; on the upper Lumesule, together with Wangoni. In Majeje country, thickly settled at mouth of Mbemkuru and north-east corner of District.	about 5,000 (about 1,000)	Muzzle - loaders, spears, bows, arrows, clubs.	Capital fighters, fighting much after the manner of the Wangoni, and much intermingled with them.
8. WAYAO : widely scattered; numerous round Masasi, on the lower and middle Rovuma, and at Chiwata, Newala, Tunduru. Enclaves at Mikindani, Kyonga. Mixed with the Wamakua.	about 45,000 (about 8,000) (Large immigration of Wayao from Portuguese territory in latter part of 1912)	Muzzle - loaders, spears, bows. Arms and powder are known to be smuggled in from Portuguese territory.	Formerly many wars with Wamwera and Wangoni. Half of them took part in the last rising. Nakaam and Mataka with their people are loyal. Cunning, treacherous. Surprise attacks. Ambushes in the bush.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>They are settled on both banks of the river.</p> <p>Willing, industrious. Constitute the greatest percentage of plantation workers. Have no proper tribal organization. Were formerly under a Zulu chief.</p> <p>Quiet, give no trouble. No tribal organization. Like all the other tribes, are under Akidas and Jumbes, installed by Government.</p> <p>Quiet since the last rising. The former leaders set themselves against German rule. The tribe provides next to the Wangoni the greatest number of plantation workers. Some remains of tribal organization at Masasi and Chiwata.</p>	<p>Mbemkuru mostly Kidonde, with resemblances to Swahili.</p> <p>Kingoni, a Zulu language, but now much mixed with Bantu. Swahili partially understood.</p> <p>Resembles Kingoni. Much Swahili, which is understood everywhere.</p> <p>Kiyao. Swahili is understood nearly everywhere.</p>	<p>Rectangular clay huts, straw roofs ; not defensible.</p> <p>As above.</p> <p>Rectangular clay huts. The residences of the Akidas Kazembe (at Masasi), Nakaam (at Chiwata), and Abdululahi (at Makochera) are surrounded by palisades ; defensible. Some stone houses in Jumbes Katewere's country, near Tunduru, very defensible.</p>	<p>Farming and hunting. Millet, maize, manioc, beans, field-produce, honey. No live stock.</p> <p>Farming. Maize, millet, manioc, field-produce. No live stock.</p> <p>Farming, hunting. Millet, maize, beans, manioc. The chief men have some sheep and goats and a few oxen, 5-8 each. Otherwise, owing to tsetse-fly, cattle-rearing impossible.</p>

<i>Name of tribe ; scat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
9. WAMAKUA : thickly settled in the valley of the Luku- ledi. Enclaves on the middle Rovuma in the territory of Majeje and at Ne- wala. Mixed with the Wayao.	about 18,000 (about 3,000)	Many muzzle-load- ers, spears, bows, axes, arms, and pow- der smuggled from Portuguese terri- tory.	Fights against Wayao, Wa- mwera. A warlike tribe. Sur- prise attacks. Ambushes on marching columns and camps. Also by night.
10. WAMARABA ; in south of District ; near Mikindani and Kyonga ; N. of the Rovuma. Mixed race of Arabs and Was- wahili with Wayao.	about 2,000 (about 400)	Muzzle-loaders.	Not very warlike.
11. WANYASA ; scattered on the middle and lower Ro- vuma and in the territory of Majeje. Have immigrated from Nyasa ; mixed with the Wayao and Wamakua.	about 2,000 (about 400)	Muzzle - loaders, spears, bows, axes.	Not very warlike. Fight like the Wayao and Wamakua.
12. WAMATAMB- WE ; along the Rovu- ma, on its islands, and in the Majeje country.	about 4,000 (about 800)	Muzzle - loaders, spears and axes. They probably smug- gle arms and powder from Portuguese territory.	Unwarlike. Mostly fisher- men.
13. Wanyamwezi, Indians, Arabs ; on the coast and in the neighbourhood of the plantations.	about 8,000 (about 1,000)	Spears, bows, ar- rows, fire-arms.	

NOTE.—There is a constant coming and going from and to Portuguese territory. It is therefore difficult to state number of population accurately. Large additions in 1911 from the South and West. For 1912, see under Wayao (8).

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
About half of them remained loyal in the Majimaji rising. The people quiet since last rising, but not docile. No tribal organization.	Kimakua and Kiyao. Swahili understood everywhere.	Rectangular clay huts, straw roofs ; hardly defensible.	Farming. Millet, maize, manioc, beans. No cattle owing to tsetse.
Quiet. No tribal organization.	Swahili.	Four-cornered clay huts ; straw or <i>makuti</i> roofs. Scarcely defensible.	Agriculture. Trade with the Waswahili.
Are under the influence of the Wayao and the Wamakua.	Kiyao ; Swahili is understood everywhere.	As Wayao.	As Wayao.
Quiet : no tribal organization.	As above.	No fixed dwellings.	Agriculture, fishing. Millet, maize, fish.
	Arabic, Hindustani and Swahili.	Store-houses with corrugated iron or <i>makuti</i> roofs ; defensible. The Wanyamwezi travel about as carriers, with no settled home.	Merchants. Wanyamwezi are carriers. Fish, rice, maize.

X. DISTRICT OF SONGEA (not including Nyasa)

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
<p>1. WANGONI : Bantu tribe, Zulu, much mixed with Wanindi, Wandendaui, Wangindo, Wapangwa. SW. Ungoni is most thickly settled.</p>	<p>40,000 (8,000)</p>	<p>Many muzzle-loaders not given up after 1905 rising, but hidden in the country. Otherwise spears. Bows and arrows not customary.</p>	<p>In middle of last century Wangoni from Nyasa fell on the land and overthrew the aborigines. They were feared far and wide as being particularly brave and warlike. Of powerful build and capable of standing any climate, they extended their plundering expeditions as far as the coast (Kilwa, Mohoro). They brought the conquered tribes back as slaves, thus continually increasing their fighting powers. Rose in a body in 1905. Kept up a brave stand for months under Chaburuma against detachments of the Protectorate troops. Method of fighting: rushes in masses of spearmen: under cover of these men with muzzle-loaders fire from the high grass: the latter also attack in line by themselves, using the ground to the best advantage. Frequently defended themselves in caves of Litembo Mountain.</p>
<p>2. WABENA : in the Iringa District, with one section in the NW. of the Songea District.</p>	<p>8,750 (1,750)</p>	<p>As above.</p>	<p>Fought against the invading Wangoni. In the 1905 rising they fought bravely against the Germans in many battles. Method of fighting as above. Good, stubborn fighters. Leave their mountains very unwillingly.</p>
<p>3. WAPANGWA : between the Ruhuhu and Lake Nyasa.</p>	<p>3,950 (790)</p>	<p>As above.</p>	<p>Not conquered by the Wangoni. Fought bravely in 1905. Method of fighting, like the Wabena.</p>

Coast, for which see under XI., Langenburg).

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>Since their conquest in 1906, peaceful. Influence of Government slowly becoming greater. The rulers in the land are the Wangoni proper of Zulu descent. The slaves taken on their expeditions and settled in Ungoni soon became warlike and called themselves Wangoni (Mafiti). Their distinctive mark is the slit ear-lobe. The influence of the old tribal chiefs was very great in time of war. The rising destroyed their power and the influence of the new chief is trifling.</p>	<p>Kingoni. Swahili widely extended.</p>	<p>Clay huts with grass roofs of different types ; little capable of defence.</p>	<p>Diligent cultivators of the usual negro agricultural products : particularly much eleusine ; in the south and in Matumbi much rice ; the former principally made into <i>pombe</i>. Live stock annihilated through the rising. There are in the District, in Ungoni, Ubena, and Upangwa, only : 1,790 cattle. 3,390 goats. 523 sheep. 146 pigs. 2 mules. 54 donkeys.</p>
<p>Quiet since their conquest in 1906. For tribal organization see Iringa.</p>	<p>Kibena. Swahili little understood.</p>	<p>Clay <i>tembes</i> with grass roof ; little capable of defence.</p>	<p>Diligent agricultur- alists. Leguminous crops particularly cultivated. Large amount of live-stock annihilated during rising. During rainy season they get drunk on bamboosap(<i>ulahi</i>).</p>
<p>Quiet since conquest.</p>	<p>Kipangwa, little Swahili.</p>	<p>As above.</p>	<p>Cultivate the customary negro agricultural products. Live-stock, see No. 1. During rains get drunk on bamboosap.</p>

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
4. WAMATENGO : between Lake Nyasa and the upper Rovuma.	12,650 (2,533)	As 1.	Wamatengo apparently not at all warlike. Leave their mountain lands unwillingly. Principal way of fighting : defence of their caves.
5. WAMATUMBI : between Ruhuje and Pitu River.	10,000 (2,000)	Many muzzle-loaders. Were not disarmed after rising, as they were friendly.	Successfully resisted attacking Wangoni. Capable fighters. Helped the German Expeditionary Force in 1905. Method of fighting : close formation in masses.
6. WADENDAULI : mixed with Wangoni.	11,900 (2,380)	(See Wangoni, 1)	
7. WAYAO.	3,000 (600)		War slaves of the Wangoni.
8. WANGINDO.	1,635 (327)		

XI. DISTRICT OF LANGENBURG (including

1. WANYASA : (a) <i>Wasianda</i> live round Wiedhafen as far as Tamanyale.	16,912 (3,680)	In the whole District 1,205 stamped muzzle-loaders ; spears, bows and arrows.	No warlike history, no aptitude for war.
(b) <i>Wakisi</i> : inhabit the coast of Nyasa, between Mwaya, Old Langenburg, and Wiedhafen.	2,830 (1,030)	No muzzle-loaders ; a few spears.	Unwarlike.
(c) <i>Wamatengo</i> : on the high land of Matingo (south of the Livingstone Mountains). Not thickly settled.	Included in the figures above	Few muzzle-loaders ; throwing-spears, knives, bows and arrows.	A few punitive expeditions had to be made against them. They fight by ambushes. Hiding-places in rock-caverns.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
As 3.	Kimatengo. Swahili fairly widespread.	Isolated huts ; clay buildings with grass roofs.	Very diligent agriculturalists. Much cultivation, particularly maize.
Have shown themselves friendly to German Government. Would be difficult to overcome, with their many muzzle-loaders, in their bush-covered land.	Kimatumbi. Swahili widely extended.	Clay <i>tembes</i> with grass roof ; little capable of defence.	Diligent agriculturalists. Cultivation of usual negro agricultural products, particularly much rice.

Nyasa Coast, now attached to Songea District).

Loyal subjects. Have never made difficulties for the Government. Jumbes generally control single villages.	Kisianda. Swahili much spoken.	Rectangular huts of clay and grass or bamboo.	Fishers and agriculturalists. Millet, maize, sweet potatoes. Very few sheep and goats. A few oxen.
Have never resisted German rule. Single villages under Jumbes.	Kikisi and very little Swahili.	Circular grass huts.	Fishing. Scanty cultivation of millet and maize. Pottery.
An unruly hill-people. Some of the greater Jumbes are too far away from Langenburg to be thoroughly under the influence of Government.	Kimatengo, very little Swahili.	Huts of bamboo and grass between boulders of rock. Also live in caves in the rocks ; no villages ; scattered huts.	Agriculture, maize, peas, beans, potatoes. Bananas are scanty. Live-stock here and there.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
2. WAKINGA : inhabit the highland of Ukinga.	16,663 (5,306)	A few muzzle-loaders. Otherwise knives, iron stabbing- and throwing-spears, shields, but few bows and arrows.	Formerly they had fierce fights with the Wangoni and Wasangu ; must be considered a warlike hill-folk. Generally fight by ambush, also by open attack.
3. WABWANYI : inhabit the Bwanyi highland, the eastern part of the Elton plateau.	6,715 (2,042)	Hardly any muzzle-loaders, spears, throwing - spears, shields, knives.	Formerly they often fought against Wasangu and Wahche.
4. WASANGU : inhabit the part of Usangu plain belonging to Langenburg. They belong to the great tribe of the Wasangu defeated at Iringa.	916 (274)	Possess muzzle-loaders, spears, and shields.	They fight in the bush. Sudden attacks.
5. WABENA :	4,694 (1,452)	See District of Iringa.	
6. WAZAFUA : inhabit Uzafua highland and lower Uzafua between the Pass of Igale and the Mbeya Mountains.	9,357 (2,511)	Very few muzzle-loaders ; spears.	Very little known on the subject.
7. WAPOROTO : inhabit the rough mountain country round Rungwe and between Rungwe and Ngozi.	3,046 (782)	Throwing spears.	Very little known.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
Took part in the rising of 1905. Governed by several Jumbes and Under-Jumbes, who have great influence.	Kikinga. Hardly any Swahili.	Round huts of bamboo and straw, lying scattered ; often enclosed or hidden in patches of forest.	Agriculture ; much wheat, peas, potatoes, latterly also oats and barley. Moderate amount of cattle, but a larger quantity of sheep and goats. Skilful smiths.
Have settled down under German rule. Are organized under Government. A few Grand Sultans, but not influential.	Kibwanyi. Little or no Swahili.	Partly round, partly four-cornered huts of grass or bamboo ; sometimes clay huts. No connected villages.	Agriculture ; maize, peas, potatoes, eleusine. A good many sheep and goats ; moderate amount of cattle.
Under a Sultan of not much influence.	Speak a good deal of Swahili.	<i>Tembes</i> made of clay.	Agriculture and cattle-breeding. Maize, millet, potatoes. Much cattle. Hunters.
See District of Iringa.			
So far Government has had but little influence, at least in the Wazafua highland. Separate chiefs with village headmen under them. Chiefs have little influence.	Kizafua, hardly any Swahili.	Round huts of bamboo and grass, plastered with clay.	Agriculture and cattle-breeding. Maize, potatoes, peas, beans. Moderate amount of cattle.
Not yet under the Government. They always take refuge in the virgin forest when Europeans approach.	No Swahili.	Round bamboo-grass huts.	Farming. Peas and potatoes. Much hunting.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
8. WANIKA : inhabit the high plain of Unika.	6,422 (1,488)	About 1,000 muzzle-loaders, besides throwing-spears, poison (?), powder (?).	Warlike, brave people ; have formerly fought with Wasangu, also with the Protectorate troops.
9. WAMALILA : inhabit highland of Malila.	1,700 (567)	Muzzle - loaders, spears.	
10. WANDALI : in the Undali mountain country ; Kiya valley is thickly peopled.	16,614 (4,563)	A few muzzle-loaders, spears, and knives.	
11. WARAMBIA ; inhabit Urambia ; akin to the Wanika.	1,291 (325)	Perhaps some muzzle-loaders ; spears.	Nothing known.
12. WANIAMANGA ; in the lowlands of the Ukana, Kalunga, and Songwe (Nyasa), also in the southern part of the Tanganyika plateau ; spread into Langenburg District and into British territory (Rhodesia).	5,630 (1,400)	Muzzle - loaders ; spears.	Not warlike.
13. WAWUNGU ; in the southern and south - eastern Rukwa steppe and in the highland rising to the east of L. Rukwa as far as the Lupa.	2,285 (711)	Many muzzle-loaders ; throwing-spears, bows, and poisoned arrows.	Seemingly a brave people. Past history unknown.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
Have submitted to German rule. Government influence not yet felt everywhere. Divided into small chieftainships.	Kinika. Little Swahili.	Round huts of bamboo and straw covered with clay. Villages surrounded with hedges or palisades.	Agriculture and live stock. Maize, millet, much eleusine, potatoes, beans ; many vegetables. Many sheep and goats ; less oxen.
Are timid and often flee at the approach of a European. Under many small Jumbes.	Kimalila. No Swahili.		Agriculture and cattle. Much eleusine and maize ; potatoes.
More approachable than the Wamalila, they have adapted themselves to the German rule in a great measure. Influence of administration perceptible. Sultans, some of whom are very influential.	Speak a language akin to that of Konde-land. Little or no Swahili.	Round or oblong huts of bamboo and straw in banana groves.	Live stock and agriculture. Maize, beans, potatoes. Much banana in the valleys. Much cattle.
Have submitted to German rule like the Wamika. Government has little influence. Small chieftainships.	Language resembles Kinika. Very little Swahili.	Round or rectangular huts of slender tree-trunks and grass.	Agriculture, stock-breeding. Maize, potatoes, eleusine, millet. Not much cattle.
The influence of German administration is not yet felt everywhere, particularly on the British frontier. Under a Sultan Mkoma, who is very influential.	Kiniamanga. Hardly any Swahili.	Badly built and carelessly kept grass huts.	Agriculture. Maize, bean, millet. Possess some live stock, chiefly sheep and goats.
Are completely under the Government and pay taxes. Are under a Sultan, who has little influence.	Kiwungu. Swahili is much spoken.	Large villages of huts of timber planks, clay, and grass. Not prepared for defence.	Agriculture and hunting. Millet, less maize, ground nuts. A great number of sheep and goats.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
<p>14. WANIAKIUSA ; or WAZOKIRI ; inhabit the Konde uplands and plains between Songwe, Undali, and Malila highlands in the west, the Rungwe Mountains in the north and the Livingstone Mountains in the east ; thickly settled on the southern border of the rivers flowing into Nyasa.</p> <p>(a) <i>Wazeria</i> in Kas-iabona.</p> <p>(b) <i>Waraguru</i>, in Mwuakareri.</p> <p>(c) <i>Wapenya</i>, <i>Kuyumba</i>, <i>Wakukwe</i>, in Kiwira.</p>	<p>15,113 (4,351) 8,115 (2,418) 14,249 (3,765)</p>	<p>Hardly any muzzle-loaders ; throwing-spears with barbs, shields and knives.</p>	<p>Fought formerly with the Wasangu and Wangoni and kept their independence. Brave, but hardly warlike. Fight by open attack. Fought against the Protectorate troops seventeen years ago, not since.</p>

XII AND XIII. DISTRICTS OF

1. WAHA ; on the tableland of Uha, on the middle course of the Mlagarasi. Ujiji region, 2,000 huts ; Uha (Ushingo), 1,000 huts ; Muhambwe, 800 huts ; Uyungu, unknown ; Lukalanga, 1,000 huts. In the N. they are mixed with the Warundi, in the S. and E. with the Manyema. The Watusi are their rulers.

about
45,000
(about
9,000)

A few muzzle-loaders ; throwing and stabbing spears, bows and poisoned arrows.

In the Central African Tribal migrations, the Waha were overthrown by the Watusi, a Nilotic tribe coming from the N. ; these are still to-day the chiefs or leaders. They have offered successful opposition to the pressure of the Arabs. Their subjection to German rule is the result of numerous military expeditions. The races N. of the Mlagarasi are specially brave and warlike. Mode of fighting : surprise attacks on patrols and small detachments ; afterwards hasty retreat. Surprise attacks on post-runners and caravans must still be reckoned with to-day.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
Pay taxes willingly, but otherwise keep to themselves. In the plains they are under powerful Sultans. In the upland they are divided under many small Jumbes. Jumbes are quite powerless.	Kiniakiusa. Very little Swahili.	Round or long huts of bamboo and grass, lying unenclosed among banana groves.	Chiefly stock-breeders ; but grow maize, potatoes, millet, eleusine, rice. A great many bananas and much cattle.

BISMARCKBURG AND UJJI.

The country, especially North Uha is still very imperfectly conquered. Uha is divided into six Sultanates: these again into circuits with a *mtwale* at the head of each; these again into village communities, with a *ntego* as headman. The ruling power is in the hands of the Watusi, and is hereditary. The Waha (Wahutu) can be village headmen.

Kiha. Can understand the Warundi. Swahili unknown.

Lofty, cone-shaped grass-huts, fenced in with a hedge of growing *milumba* trees, linked together with plaited reeds. They are little capable of defence. The compounds of the Waha are hidden in banana-thickets; those of the Watusi lie in the open on the heights. To the N. of the Mlagarasi there are no villages, only compounds of from 4 to 10 huts.

Watusi are stock-rearers, the Wahutu agriculturalists. In S. Uha, in the Mlagarasi bend, there are plenty of sheep, goats and cattle, and always rich harvests of field-produce. To the N. of the Mlagarasi mainly sheep and goats. The following are cultivated: maize, millet, sweet potatoes, manioc, pumpkins, cucumbers, lentils, beans, peas, ground-nuts, bananas.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
2. WAWINZA ; on the lower course of the Mlagarasi, and on the River Gombe up to the Tabora boundary. They are most thickly settled in these river valleys.	about 13,000 (about 3,000)	Many muzzle-loaders, little gunpowder; spears, bows and poisoned arrows.	Their past military record is unknown, as the race is too insignificant.
3. WAWENDE and WATONGWE ; between the Mlagarasi and the Musengusi, L. Tanganyika and the Zindi.	about 7,500 (about 500)	Proportionately many muzzle-loaders, little gunpowder; spears, bows and poisoned arrows.	In former days they had sanguinary wars with the slave-hunters from Tabora, by whom they were subdued. Their internal factions, moreover, have reduced them to such a state that they no longer present any serious danger. Their mode of fighting is bush-warfare, and surprise attacks from ambush.
4. WAGALLA ; to the E. of Ukawende, on the middle course of the Ugalla. To the S. of the Ugalla is the densest settlement.	about 4,000 (about 1,000)	As above.	As above.
5. WAKONONGO ; in Ukonongo, on the eastern side of the steppes of Lake Rukwa.	about 40,000 (about 6,000)	Muzzle-loaders can be had, but little powder ; spears, poisoned arrows and bows.	Their former wars are little known. They are an unwarlike folk. In spite of this, they might readily join in a rising by another District. Their mode of fighting : bush-warfare, surprise attacks.
6. WAFIPA ; on the tableland between Lakes Tanganyika and Rukwa.	about 30,000 (about 6,000)	As above.	As above.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>The Wawinza have no political importance. The orders of the Government are grudgingly obeyed. Discontent owing to loss of salt-license, salt production being now a monopoly of the Gottorp Works. There are three Sultanates, divided into village communities.</p> <p>Their attitude towards the German rule is loyal. Their independence was willingly surrendered. The country is divided into Sultanates, which are further divided into sub-Sultanates and village communities.</p>	<p>Kiwinza. On the trade-routes much Swahili is spoken. Kiwinza is closely related to Kiha and Ki-rundi.</p> <p>Kiwende, a Bantu dialect. No Swahili.</p>	<p>Round-shaped clay-huts, with grass roofs surrounded by wooden palisades. The villages are partly capable of defence, as they are surrounded by trees, bushes, and ditches.</p>	<p>In former days they made their living by salt-trade alone, after they lost the licence they turned to agriculture. Little corn, and a small decreasing stock of sheep and goats. Cattle are not to be met with, because of the tsetse-fly.</p> <p>In the interior, they are hunters, on the lake fishermen. There is a scanty cultivation of maize, rice, millet ; small stock of sheep and goats.</p>
As above.	As above.	As above, except that there is no fortification.	Very poor country ; no live stock, little agriculture. Corn cultivation as above. Game, only giraffes and elephants.
As above.	Similar to Kiwende. Very little Swahili.	As above.	Little corn-cultivation, as in Ugalla. Little live stock.
In 1905 there were beginnings of small local trouble ; otherwise as above.	Kifipa, similar to the languages of 3-5. In every place some Swahili is spoken.	As above.	They are diligent agriculturalists. Rich crops of maize, millet, manioc, sweet potatoes, and so forth. Much live stock.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
7. WARUNGU ; in the S. of Ufipa, and related to Wafipa.	about 3,800 (about 800)	Many muzzle-loaders, much the same as above.	As above.
8. IMMIGRANTS ; (a) Arabs. (b) Indians. (c) Manyema. (d) Wanyamwezi. (a, b) in Ujiji, Bismarckburg, Ruchugi. (c) in Ujiji, in the larger coast-places, Uha, and on the caravan-routes. (d) on the frontiers towards Tabora, and on the caravan routes.	In Ujiji about 5,000 (about 4,000)	Many muzzle-loaders. Powder in some cases from the Congo and British territory. Apart from this, spears.	Remnant of the Arabs settled in Ujiji after the Bushiri rising. Round about Ujiji there are settled former rebel soldiers of the Congo (Wahuni) ; they are very brave and warlike, and crafty.

1. WANYAMWEZI and WAZUMBWA ; a Bantu race scattered over whole district. Thickly settled round about Tabora, and N. and NE. of it to the steppes of Mbala and Wembere.

350,000
24,000

374,000 (75,000)
For the last few years there has been a permanent decrease, because they have moved away to work on plantations or the railway.

About 50,000 muzzle-loaders. Throwing and stabbing spears, about 5 ft. long, furnished with heads of 11 in. in length without blood channels ; bows and arrows (not poisoned).

XIV. DISTRICT OF

Formerly they were frequently at war with one another and with neighbouring tribes. Mostly raids to steal men and cattle. In the middle of the last century, an invasion by the Wangoni from Ukonongo. At first, the Wanyamwezi were overthrown by the superior tactics of the Wangoni, then they improved their own military organization (training a 'ruga-ruga' troop, and fortifying their frontiers), and, under brave leaders, they drove back the Wangoni. Against the Arabs, whose chief market for slaves and ivory was Tabora, they maintained their independence. The Arab caravans were always

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwellings ; how far capable of defence.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
As above.	A kindred tongue to Kifipa. Much Swahili spoken.	As above.	As above. Mainly sheep and goats.
Restless folk, in whom no reliance can be placed. Their attitude in the rising of 1905 was doubtful. They await the result, and range themselves on the winning side.	Their native tongues, or Swahili.	Arabs have very strong clay-buildings in Ujiji. Beside these, there are unenclosed four-cornered clay huts with roofs of grass.	Almost exclusively traders. Their manner of life is that of their own countries. Little live stock, only for trading.

TABORA.

Since their subjugation there have been no disturbances. The Administration is carried on without difficulty. The influence of the Sultans is on the wane, as the Wanyamwezi become more dependent on Europeans by acting as porters and workers on plantations. The District is divided into about 64 divisions, under the rule of chiefs (*mtemi*). These are chosen from among the members of the chiefs' families (*mananguwa*). The divisions fall into subdivisions (*kun-*

Languages fall into the following groups of related dialects :

- I. Kiwilnana.
- II. Kifiome.
- III. Kizumbwa.
- IV. Kigallaganza.
- V. Kitakama.
- VI. Kikimbu (this is spoken by half the speakers of Kinyamwezi).
- VII. Kinyamwezi, with Kigalla and Kikonongo in Ukumbi and Ugunda. Swahili is known everywhere.

For the most part, round huts with grass roofs. The farms are fenced in by palisades of growing thorns, or trees of the fig variety. Habitations scattered singly are preferred. Only the chiefs and their following live in villages. They are little capable of defence. The villages of earlier days, fortified with palisades, walls, and ditches, as well as the big, strong *tembe*-buildings, are now only found here and there.

The Wanyamwezi cultivate the land immediately round their houses. They are not, strictly speaking, stock-rearers, but at most stock-owners. They are also keen hunters. At present they are more and more taking up portage and plantation work, while agriculture decreases. Their chief means of subsistence are maize, millet, manioc, beans, potatoes, ground-nuts, melons, cucumbers. The cultivation of rice has

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
<p>2. WAZUKUMA ; six regions in the NE. of the District, to the N. of the river Manyonga, and W. of the Lisawe. Densely settled everywhere.</p>	<p>about 100,000 (about 20,000)</p>	<p>See Wazukuma in the District of Mwanza.</p>	<p>made to pay toll for transit. The setting up of German rule cost many hard-fought battles, in which the Wanyamwezi behaved very bravely. After the defeat of Siki of Unyamwe, the process of subjugation began : it has needed repeated expeditions to carry it through. A great number of elephant-hunters, who used muzzle-loaders skilfully, have always formed the nucleus of the 'ruga-ruga' troop. Their toughness in toil and privations, their power of resistance to climatic conditions, their great knowledge of the country and of European customs, make the Wanyamwezi good fighters. Mode of fighting : surprise attacks at dawn ; attacks in close formation, and defence of village strongholds ; when muzzle-loaders are used, one rank fires and then retires to re-load while another comes forward to take its place.</p>
<p>3. WANGONI ; in the NW. of the District in the Runzewe country.</p>	<p>2,000 (about 400)</p>	<p>A few muzzle-loaders. Their former weapons, shields and spears.</p>	<p>Apparently an offshoot of the Zulu tribe, which, driven out of the Cape by Europeans, in the middle of the last century pressed into the colony. They entered Tabora from Ukonongo, attacked the Wagallanza country, then</p>

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p><i>kuli</i>), whose rulers are also taken from the chiefs' families. The land was formerly the property of the chiefs, the ordinary man owned no land. The chiefs administered justice, decided on war and peace, raised taxes, and distributed honours. They were absolute lords. Only the children of the two chief wives (<i>mgoli</i>) are considered of royal birth, and are capable of being chosen as chiefs, even if female. Former conditions are altered to-day, because the Wanyamwezi no longer return home to look after their fields, but form new settlements in other Districts.</p>			<p>been abandoned in consequence of the drought of the last few years. Tobacco is cultivated almost everywhere. In the District there are about 100,000 head of oxen, and 1,000,000 sheep and goats ; 8,000 donkeys.</p>
<p>See Wazukuma in the District of Mwanza.</p>			
<p>Their attitude towards the German Government is loyal. They are politically insignificant by reason of their small numbers.</p>	<p>The same as the Wanyamwezi.</p>	<p>The same as the Wanyamwezi.</p>	<p>The same as the Wanyamwezi.</p>

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
4. WATUSI ; distributed over the whole District. Especially thick in the open regions, free from tsetse-fly.	3,000 (600)	A few muzzle-loaders. For other arms see Ujiji.	reached Uha. Hence they were driven back towards Uzumbwa. From there they made raids on all sides. They were pressed back to Ukune by the Wanyamwezi, who were partly united under Mirambo ; thence they carried on a war with Mirambo. At last they were decisively defeated by Capt. Langheld at Swosya, and subdued ; then they were settled in the Runzewe region. Mode of fighting : attacks in close formation with shrill war-cries.
5. MANYEMA ; distributed over the whole District. Especially thick in the W. and NW., at Tabora, and on the caravan routes.	about 16,000 (about 3,000)	Muzzle-loaders are their principal weapons. Various other weapons such as are found among the tribes of the District.	See District of Ujiji.
6. ARABS ; INDIANS ; WASWAHILI ;	134 166 5,000	Many muzzle-loaders.	Some of them were formerly slaves of the Wanyamwezi, or of the Arabs ; some of them are Congo soldiers who have deserted ; some others are refugees, who left their home, the Congo State, because of famine. They are of strong physique, tough, enduring, clever, and brave.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>They have immigrated from Uha and Urundi. First established by the Wanyamwezi as stock-rearers, but afterwards succeeded, by marrying into the chiefs' families, in obtaining sometimes positions of political importance. Their attitude towards the German rule models itself on that of the Wanyamwezi. A head chief has his seat in Tabora.</p> <p>A restless element, inclined to opposition. They need special control. They live without any organization.</p> <p>In peace they willingly obey the German rule, because their commerce</p>	<p>Kiha, some Swahili.</p> <p>Kimanyema. The dialect of the tribe among whom they are settled. Swahili.</p> <p>Their native tongues, and Swahili.</p>	<p>Like those of the Watusi in Ujiji District, or of the Wanyamwezi.</p> <p>Corresponding to the country in which they are settled.</p> <p>Big, solid clay buildings ; houses made of sun-dried</p>	<p>They are only stock-breeders. They barter the produce of their stock-rearing for other means of subsistence, &c.</p> <p>Corresponding to the country in which they are settled.</p> <p>They follow their own native mode of life. Live stock</p>

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
In Tabora, on the caravan routes and other trade-centres.			

XV AND XVI. DISTRICTS OF

These tribes are arranged under the former Districts of Kilimatinde and Mpapwa, and Map). The modern divisions are indicated roughly by letters in brackets.

1. WAGOGO ; in Ugo-go (Dodoma). Thick settlements round the large marsh-steppes, in which Bubu and Mtive end, in S. Ugo-go and round about Kilimatinde.	about 68,000 (about 12,000)	Few firearms ; spears, bows, arrows.	Formerly famed as caravan robbers. Had much to suffer from the Wahehe : strong Mhehe camp with powerful garrison in SE. Ugo-go. Were overcome by Germans in heavy fighting with great losses on both sides. No characteristic method of fighting. Defence and ambush to be expected.
2. WAKIMBU ; in Ukimbu (Dodoma) and scattered in Usure (K. I.) and Ikungu (Tabora), mixed with Wasongo in Itumba (D.). Settlements in Kiwere, Itumba, and on S. edge of the Wembere steppe in Ikungu.	about 15,000 (about 3,000)	See 1.	Like the Wagogo formerly famed as caravan-robbers. Successfully withstood the Wahehe. Military expedition necessary to overcome them 1905-6. Beginnings of revolutionary movement. Not really warlike, and without characteristic method of warfare.
3. WANYANZI ; in Uyanzi (D.), in small districts lying far apart.	about 4,000 (about 800)	See 1.	Formerly caravan robbers. Not warlike.
4. WANYAMWEZI ; fairly numerous in western part of Dis-	about 8,000 (about 1,500)	Many muzzle-loaders : otherwise as above.	The Wanyamwezi formerly carried on many wars, partly among themselves, partly with

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
can only flourish under its protection. In times of unrest they await victory, and range themselves on the winning side.		clay-bricks, with corrugated iron, or grass roofs. Four-cornered clay-huts with grass roofs.	only kept for trading.

DODOMA AND KONDOA IRANGI.

which have been reorganized into the Districts of Dodoma and Kondoa Irangi (see p. 19)

No great difficulties in keeping them under. The stupid, naturally lazy and unwilling Mgogo has under German rule been gradually induced to work. Railway construction. Jumbes without influence. Witch doctors dreaded.

Since they were overcome no real difficulties. Good workers and bearers. Capable, influential Sultan.

See 2.

See 2.

Languages of 1 to 4 are very closely allied, and they understand each other easily. Much intermingling through marriage and migration. Trade by barter very thriving. Can also understand, and be understood by, Wanyaturu, Wanyiramba, and Wasandawi. Several Askari of the 4th Company of Protectorate troops understand these languages. Swahili understood everywhere.

Large rectangular huts with mud roof, *tembes* for 40-50 living together. Inner court for cattle. Walls of strong mud-work with only one entrance, which can be firmly closed. Good defensibility.

As above. *Tembes* more strongly built.

See 2.

Round huts, straw roofs, lately *tembes* also.

Chiefly cattle-breeder. Means of maintenance: negro millet, beans, peas, manioc, eleusine, sweet potatoes, some rice, pumpkins, cucumbers, wild fruit, much milk. 150,000 head of cattle, about 9,000 sheep and goats. Donkey-rearing unimportant.

Agriculture. Stock of cattle low owing to tsetse. Plenty of sheep and goats. Otherwise as above. More maize and rice grown.

See 2.

Chiefly agriculture. Little cattle in Ukimbu, in other

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population¹ (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
<p>tricts, also scattered throughout.</p> <p>5. WASANDAWI ; in Usandawi (K.I.), mixed with Wagogo, Wanyamwezi, Wataturu, Wakimbu. Living close together round the former military post, Kwa Mtoro.</p> <p>6. WANYATURU ; in Turu (D.). Scattered among colonies of Wanyamwezi, Wataturu. Thick settlements in open lands from the Rift valley to the W. past the big salt lakes to the forest boundary by Usure and Iyambi.</p> <p>7. WANYAMBI, WANISANZU, WANIRAMBA ; in Districts of those names and Usure (K.I.). Mixed with Wanyamwezi, Wasukuma, Wakimbu. Very thick in Dulumo valley, on the Iramba plateau, and at foot of this plateau on W. side.</p>	<p>about 25,000 (about 4,500)</p> <p>about 100,000 (about 20,000)</p> <p>about 80,000 (about 17,000)</p>	<p>Spears, bows, poisoned arrows ; a few firearms.</p> <p>Few firearms ; spears, arrows, bows, clubs.</p> <p>Few firearms ; spears, bows, arrows.</p>	<p>their neighbours. Warlike tribe. Method of fighting : chiefly attack at close quarters, but also defence in their compounds, which are surrounded with thick hedges.</p> <p>Quite different from the other tribes. Speech consists of clicking sounds, like the hunting tribe of the Watindiga. Apparently an aboriginal race. Formerly many defensive wars, particularly against the Wanyamwezi. No characteristic method of warfare. Mostly defence in great <i>tembes</i> or on the mountains. Weak people.</p> <p>Formerly famous caravan robbers ; withstood the Masai energetically ; undertook small offensive campaigns. Method of warfare : ambush in thick shrub after previous salvos of arrows. Very prolific race. Character : hasty and impulsive.</p> <p>Had to carry on many defensive wars against Wanyamwezi and Masai. Not really warlike. Method of warfare : in 1908 installed themselves in a fortified camp in the shrub. and were well stocked with provisions. Thieving propensities.</p>

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>Since rising in 1901-3, quiet and submissive. Work as labourers, no use as porters. Without any real tribal organization, now under Jumbes, whose influence is slight.</p> <p>Opposed to German rule. Much discontent owing to cattle-traders, 1908. Unrest due to influence of powerful witch doctors. Suppressed without fighting by calling up of troops. Orderly conditions since the Singida post was established, 1908. No tribal organization, only family clans. Jumbes installed, have little power.</p> <p>Untrustworthy, not fond of work, stupid ; offer a good deal of passive resistance. Jumbes without influence. Witch doctors dreaded.</p>	<p>Own language. Clicking sounds like Watindiga. As result of much intermingling understand languages of neighbours. Swahili understood everywhere.</p> <p>No. 6 and 7 very similar languages. Bantu language interspersed with Hamitic words. As result of intermarriage, migration, and trade, ready understanding of neighbouring languages. Swahili is everywhere understood.</p>	<p>Mostly little, low <i>tembes</i>, not very capable of defence. Large isolated <i>tembes</i> in the mountains capable of defence.</p> <p>Low <i>tembes</i>, sometimes sunk in the ground, with the thick euphorbia hedges characteristic of Turu. Impregnable kraals, as pictured in earlier accounts, are not found, but large caves, sometimes skilfully prepared for defence. Good hiding-places.</p> <p>Strong <i>tembes</i>, generally lying together to form a kind of a village. Many rock-caves good for defence. Entrances difficult to find.</p>	<p>districts cattle - breeders.</p> <p>Lost much cattle 1901-3. Now agriculture. Same cultivation as in Ugogo, but more productive. Honey. Stock: 30,000 cattle, 5,000 sheep and goats. Donkey-breeding unimportant.</p> <p>Cattle-breeding and agriculture. Very good soil. Turu, granary for regions round. Stock of cattle: 100,000 cattle, 30,000 sheep and goats. Donkey-breeding very common. Good material, plenty of Muscat stallions.</p> <p>Stock-breeding and agriculture. Manioc, maize, and rice little cultivated. About 80,000 cattle, about 70,000 sheep and goats. Much breeding of donkeys. Very good animals.</p>

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare</i>
8. WATINDIGA.	about 200	Poisoned arrows, bows.	Only hunters, without any permanent dwelling-place.
9. WAGOGO ; in Ugogo (D.).	55,000 (11,000)	About 600 muzzle-loaders. Long spears on the Masai pattern. Arrows without poison.	Formerly fights with Wahehe and Masai. Well known for caravan robbery and cattle thieving. They demanded toll on the roads and seized enormous sums for the use of their watering-places. Manner of fighting : mostly defence in their <i>tembes</i> . A decision is only reached when their cattle, which are hidden in the thorn bush, are seized. (Spies should therefore be bought.)
10. MASAI ; in S. part of the Masai Steppe (K.I.). Chief part of the tribe in Moshi District.	about 3,000 (about 900)	No muzzle-loaders. Long spears, big shields, long knives in leather sheaths. Clubs.	Formerly made raids against all neighbouring tribes, mostly by night. In-fighters. Brave when in the majority. Very cowardly against firearms. (See Moshi District).
11. WARANGI in Irangi (D.), akin to the WASI in Uwasi and WABARUNGI in Burungi.	39,000 (12,000) 5,800 (1,900) 3,500 (1,150)	About 200 muzzle-loaders. Spears, shields, arrows without poison.	In early times many small wars with one another. Caravan robbers. Always fled before the invading Masai. Not warlike. Were quickly overcome in the 1896 rebellion. Manner of fighting mostly defensive.
12. WAFIOME ; in Ufiome (D.).	10,000 (2,500)	About 90 muzzle-loaders. Short throwing spears, shields, bows and arrows.	In early times many fights with neighbours, especially the Masai. Caravan robbers. Manner of fighting : defence in their huts, cattle driven off.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
Live only in the bush. Keep themselves timidly from Europeans. Trade with Wanisanzu, Wam-bulu, Wataturu.	Clicking sounds. Understand their neighbours.	Straw huts, many families living together.	Live on game, honey, wood-fruits.
Everywhere quite friendly to the Government, especially peaceful latterly. Influence of the Government easily recognizable. Jumbes without special power. Taxes collected without difficulty.	Kigogo. Swahili very widely spread.	Fortified, four-cornered mud <i>tembes</i> with one or more inner yards. Easily defended.	Cattle-rearers and farmers. About 60,000 head of cattle. Cultivation of millet (<i>mtama</i>) and benni seed (<i>maweke</i>). Little maize.
At the beginning of the German rule, bloody fights on Kilimanjaro. Since then only cattle thieving. Influence of the Government not great. Try to avoid the taxes. Strong tribal organization.	Kimasai. Little Swahili.	Round thorn kraals in which are light brushwood huts covered with dung. Not capable of defence.	Only stock farmers. Live on milk and meat. Cereals are bartered for with neighbours. Cattle, about 10,000 ; sheep and goats, about 60,000 ; donkeys, about 200.
Peaceful, but shy and unreliable. They are bound together in tribal communities. The Jumbes have never had any influence.	Kirangi with small differences of dialect. Swahili widely spread.	Four-cornered, low, <i>tembes</i> sunk in the ground. Lying scattered. Not easily to be defended.	Stock-rearing and farming. Cultivation of millet, maize, ground-nuts, manioc, eleusine.
They were fought against in 1896. They are very shy with Europeans. Pay their taxes without difficulty.	Kifome. Swahili little used.	Low, half-sunk <i>tembes</i> . Underground caves, from which a gallery leads into the open air. This exit is hidden with foliage and stones.	Farming and stock-rearing.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
13. WAMANGATI , or WATATURU (called also Tatoga) : in Mangati division and on Gurui Mountain (K.I.).	3,600 (1,000)	Muzzle - loaders ; spear, shield, clubs, poisoned arrows.	Formerly many fights with the Masai and Wafiome.
14. WANGURU : on the W. slope of Nguru Mountains (K.I). Chief part of the tribe in Bagamoyo District.	11,000 (3,200)	About 500 muzzle-loaders.	See Bagamoyo District.
15. WAKAGURU : in Kaguru (D. and Morogoro).	21,000 (6,000)	About 400 muzzle-loaders. Also short spears, bows, and arrows.	Formerly many fights with Masai invaders. Not warlike.
16. WASAGARA : in Usagara (D). Chief part of the tribe in Morogoro District.	3,500 (1,000)	200 muzzle-loaders.	See Morogoro District.
17. WAHEHE : living mixed with the Wasagara.	2,500 (700)	200 muzzle-loaders.	See Iringa District.

XVII AND XVIII. DISTRICTS OF

1. WAPARE : in Pare Mountains and little oases at foot of them. Thick settlements by water-courses in banana groves. Northern	16,000 (3,200)	No muzzle-loaders. Masai spears, sword, and club. Poisoned arrows, bows, shield.	Formerly suffered much by attacks from Masai and Waj-agga. Thereby lost their cattle. Unwarlike, shy, timid, mountain people. Guerilla warfare in thick banana groves and caves. Since Masai danger
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<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
The Wataturu took part in the Turu rising of 1908 owing to the influence of war medicine. Taxes are paid regularly by them.	Tatoga. Swahili, very little known.	Miserable little <i>tembes</i> surrounded by high thorn hedges. They are covered with wicker-work. Only round Masa Galoda NE. of the Gurui Mt. small permanent settlements with farming.	Only cattle-rearers. Live on milk, flesh, and oxen blood. Cereals are got from Turu, Ufiome, and Iraku in exchange for cattle. Many cattle.
Loyal to the Government, and its influence great. Organized into Jumbeships. Jumbes are without power. Head Jumbe is Saileni in Mamboya (1910).	Kikaguru. Swahili widely spread.	Partly round huts, partly <i>tembes</i> , as the Wagogo. The former not easily defended.	Farming and cattle rearing.
Took a small part in the rising of 1905. Now quite submissive. Organized under small Jumbes.	Kisagara. Swahili everywhere.	<i>Tembes</i> as in Ugogo.	Farming and cattle rearing, as in Ugogo.
Completely overcome and submissive to the Government. Organized under small Jumbes.	Kihehe. Swahili everywhere.	As above.	As above.

MOSHI AND ARUSHA.

Fairly quiet and contented. Influence of Government small. Under chiefs.	Bantu language. Swahili is little known in mountain district, better in steppe oases.	Round, domed huts, thin mud walls, grass roof, situated in banana groves and in river valleys. Some of them are small hamlets surrounded	Industrious cultivators. Many irrigation canals. Food : maize, beans, sweet potatoes, a great many bananas. Cattle, sheep and goats.
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<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
parts of range thinly settled.			has subsided they have also settled in the steppe. News is conveyed by shouting from mountain to mountain.
2. MASAI : in the reservation S. of the Meru Mountain. Living together in village communities.	9.500 (2,000)	Spear with long blade, long ferrule, and thick wooden shaft ; short lancet-shaped sword with weight well forward ; shield with coloured device ; wooden clubs. Bows and poisoned arrows only among the older people in the camps for defence. Fire-arms not carried. Warriors not allowed to make their own weapons.	Hamitic race, coming from the N. conquered the whole of the so-called Masai Steppe. Great robber-wars against neighbours with cattle. Proud adventurous warrior-race, the terror of all living near. Special warrior caste. Warriors are those of from 20 to 30 years. Can do big marches of 43-49 miles several days running. March at night, attack open camps and villages at dawn and at night. Attack in close formation. Extraordinarily quick means of communicating news. Know all watering-places. Conquered after many fights. Now cattle-stealers, with a wholesome respect for breech-loaders. Excellent auxiliaries.
3. WANDOROBBO : in the Masai steppe and neighbouring steppe districts.	800 (180)	Muzzle-loaders not to be found. Poisoned arrows, bows, swords, knives, throwing-spears.	Wandorobbo related to Masai. Partly impoverished Masai. Used by them as spies and guides. They had to give up their ivory and ostrich feathers to the Masai for very small compensation. Hunt and defend themselves with poisoned arrows. Poison works very quickly (affects heart). Fight any wild animal alone. Very good guides in the steppes and good herdsmen.
4. WAJAGGA : on the slope of the Kili-manjaro, E., W., and	about 90,000 (20,000)	Few muzzle-loaders. Masai spears, swords, shields, clubs.	Formerly much raiding among themselves and against neighbours. Defensive wars

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>Quiet since conquest, but only from fear of German rifles. They find life in the Reserve irksome: leave it frequently to get away from control. Earn cattle as auxiliaries, one cow for campaign per man. Subordinate to the chief appointed by Government. Actual leaders, speakers chosen by themselves (<i>Oleigwanani</i>), leaders in war also. The British Masai chief, Oianana, at Nairobi, is head chief and witch-doctor for all Masai.</p>	<p>Hamitic language (Kimasai). Swahili understood in every kraal.</p>	<p>by hedges. Without means of defence.</p>	<p>Honey produce. Good smiths. Salt in Jipe marsh.</p>
<p>Do not trouble about the Government. Wander about the steppes following the herds of game. A small proportion only, settled. Are very shy, and afford Europeans very unwilling service as guides. They trust only a few Europeans whom they have long known.</p>	<p>See No. 2. Swahili very little understood.</p>	<p>Huts of wattle, grass, wild-beast skins, hidden in the heart of the bush, intended to last only for some days or weeks. Live together in kinships.</p>	<p>Only hunters. Move with game, as game is their only food besides honey and wild fruits. Cereals, ornaments, and cattle for slaughter purchased with skins, ostrich feathers, ivory, salt and dried game.</p>
<p>No rising since conquest. Local quarrels and unrest frequent. In-</p>	<p>Bantu language. Easily make themselves un-</p>	<p>Round huts of banana leaves, with no means of defence,</p>	<p>Cattle - breeding with stall feeding. Much banana culti-</p>

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare</i>
S. side. Thickly settled in large districts separated by woods.		British breech-loaders for some time past.	against Masai. Large caves for hiding. Strongly fortified places were used as <i>points d'appui</i> against German troops. Their conquest needed much fighting. Ground very difficult for German troops. As a mountain people they suffer much from fever in the steppe.
5. WAARUSHA: on the S. slope of Mt. Meru and in the steppe on the Weruweru River (Arusha Ya Chini). In large districts separated by woods.	13,000 2,950	Masai spears, swords, shields, clubs (bought from the Wajagga)	As 2. Caves and fortified places not known. Surprise attacks, especially at night. Skirmishing in thick banana groves. Warlike. Cattle stealers. Formerly feared as caravan robbers.
6. WAMERU (also WARU): on the S. slope of Mt. Meru. Large, thickly populated districts separated by woods.	7,000 (1,500)	As 5.	As 2. Mixture of Wajagga and Waarusha. Wajagga-blood predominating.
7. WAMBUGWE : in Ubugwe. Whole race living close together in plain between Manyara Lake and Lawa-ya-Zereri.	9,500 (2,000)	No muzzle-loaders. Throwing-spears, arrows and bows, round shields, knives.	Fought victorious defensive wars against the Masai. Only race who could resist the Masai in the plain. Continually at war with their neighbours, the Wafiome and the Wambulu. Sudden attacks on camps and marching columns, pursuit long kept up. Good fighting race.
8. WAMBULU : in Umbulu (Iraku, name of a small district in Umbulu. The people call themselves Wambulu). Living closely together round the Gua	23,500 (5,000)	As 7. Poisoned arrows.	Victorious wars against Masai. Fights with neighbours. Tried hard to keep out foreigners and German rule (notorious for robbery on the roads). Last rising 1906. Establishment of a military post. Attacks on camps and marching columns especi-

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
subordinate, only kept in check by frequent military demonstrations. Chiefs called <i>Manji</i> rule the districts. The <i>Akidas</i> , subordinate to the <i>Manjis</i> , have most influence. Care necessary with <i>Wajagga</i> .	derstood by the <i>Waarusha</i> and particularly the <i>Wameru</i> (or <i>Waru</i>). Swahili little known in the remote districts.	hidden in banana groves. Large caves hard to approach and to find. In a rising strongly fortified positions likely to be prepared.	vation. Live on bananas principally. Cultivate maize and beans. Eleusine for preparation of negro beer. (Heavy drinkers.) Irrigation of the fields by canals. Good smiths.
Submit only to force. Considered by Germans presuming and impudent. Passive opposition to administration. Ruled by <i>Manjis</i> Otherwise as 2.	As 4.	As 2. Fortified places never erected.	Cattle-rearers. Cattle driven out to pasture. Otherwise as 2. Clothing like the <i>Masai</i> , particularly the women.
As 2 and 3. Ruled by one <i>Manji</i> and three <i>Akidas</i> .	As 4.	As 2.	As 2 and 3.
Under organized administration only since 1907. Behaviour reserved and temporizing. Influence of Government, small. Ruled over by over-chiefs, <i>Manjis</i> , and their underchiefs, the <i>Akidas</i> . <i>Manjis</i> generally great witch-doctors, with considerable influence ; 1908 unrest through witch-doctors.	Bantu language. Make themselves easily understood by the <i>Wambulu</i> . Swahili fairly widespread.	Low, four-cornered huts of reed or plaited work with flat clay roof, called <i>tembes</i> . Some large huts with strong walls, capable of defence.	Good stock-rearers. Extensive agriculture, but limited to millet. Food : millet, vegetables, meat, milk. Extensive goat-rearing. Salt trade.
Quiet since installation of military station. Demeanour reserved and shy. Are subject to <i>Mangis</i> , as 7. Witch-doctors not very influential.	As 7. Swahili little known.	Large, four-cornered strong <i>tembes</i> (see 7) with partly subterranean passages and narrow entrances sunk in the ground. Easily defended. In SE. part round huts	Good stock-rearers and diligent agriculturalists. Cultivate millet of different kinds, maize, beans, sweet potatoes. Live on cereals, milk, and meat. Much cattle,

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
Mountain, Basuta-Merker Lake, and sources of the Kwo and Yaida rivers.			ally at night. Fear the steppe because of fever, a thoroughly mountain people. Communication by calls from mountain to mountain at night. Related to Wafiome. In times of unrest drive the cattle to Ufiome or to the bush-steppe in the direction of Lake Eyasi.
9. WATATURU : in Dungobösch (SE. of Umbulu (are called also Tatoga). Thick settlements on the upper Bubü and on Lake Madumaka.	5,500 (1,200)	As 8.	Formerly great expeditions and migrations. Fought against Wanyaturu, Waniramba, Wanyamwezi. Later settled. Now scattered. Surprise attack and defence. Very capable fighters. Good guides in bush. During disturbances drive cattle to their kindred in Mangati and on Gurui mountain.
10. WASONYO : in three villages on the NW. frontier of the District.	1,200 (250)	Few muzzle-loaders. Longspears like those of the Masai. Bows, poisoned arrows.	Were formerly little troubled by the Masai, as they had no cattle, on account of tsetse. Defence in their fortified villages and in zaribas on the cliffs. Concealed positions. Hide with tree trunks the exits out of which they issue for attack.
11. MAKUA : in S. Ubugwe, on the boundary of the District.	250 (50)	About 30 muzzle-loaders. Otherwise as 7.	Came as hunters from their dwellings on the Rovuma River and settled finally on account of good hunting in the savanna on the Kwo River on the frontier of Ubugwe. Good guides in the lowlands S. of Ubugwe.
12. WANYAMWEZI : in Ubugwe, Engaruka.	300 (60)	About 30 muzzle-loaders. Throwing-spears.	Wanyamwezi colony in Engaruka installed by the Government in the uninhabited steppe as a supply dépôt.
13. WATINDIGA : in the bush on Lake Eyasi. Nomadic.	500 (100)	Poisoned arrows with large, barbed points. Throwing-	Aborigines. Only hunters. Good guides, difficult to get, only through the chiefs in

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
		with grass roofs. Rock caves in the mountains.	sheep and goats. Donkey-rearing not extensive.
Occasional risings. Disturbances in 1908 caused by tribal chiefs and witch - doctors. Otherwise as 8.	Bantu with Hamitic accent. Make themselves understood by all their neighbours. Swahili little known.	Strong <i>tembes</i> . Partly built together into villages. Very capable of defence.	Good stock-rearers. Cattle during drought season sent into bush-steppe with herds-men. Millet, maize, beans cultivated. Donkey - rearing. Salt trade. Smiths.
Quiet people. Comply with the Government's orders. Frontier-post of several Askari in Sonyo against cattle-smuggling.	Mixture of Bantu and Hamitic language. Swahili little known.	Villages and timber-obstacles good for defence.	Cultivation by means of artificial irrigation. Canal system. Much honey. Goats.
Quiet. Subject to the neighbouring chief of Umbugwe.	Kimakua and language of neighbours. Good as interpreters. Swahili spoken by all.	High, grass-covered square huts. Hunting camps in the Kwo lowland.	Hunters, cattle-rearers, and agriculturalists, fishermen.
As before.	As before.	Round huts with grass roofs.	Diligent agriculturalists. Fishermen in Umbugwe.
Live only in the bush. Completely independent, cannot be caught. Mixed	Old aboriginal language. Clicks. Make themselves	Grass huts in thick bush. Camp by families. Continually	Live on game and wild fruits. Honey. Barter ivory, ostrich

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
		spears, shields, bows, knives.	Umbulu, Dungobösch and Isanzu. When surprised, defend themselves with poisoned arrows. Bold.

XIX. DISTRICT OF

1. WAZINJA (or WAZINZA) ; on the SW. stretch of the lake from Mwanza Bay to Ruiga River in Bukoba District. Mixed with Walongo in the S. and Wasuwi in the N. Chief settlements on coast land.	about 18,000 (about 4,000)	About 125 muzzle-loaders ; bows and arrows, throwing spears. Arrow-poison obtained from the Washashi.	Conquered the land in the Central African migration, and have ruled it since then under a Hamitic ruling family (Wahinda). Later successful defence against Baganda invasions. War with neighbouring tribes. Manner of fighting : surprise attack, ambush, bush-fighting.
2. WALONGO ; in Uzinja and to the S. Mixed also with the Wazumbwa. Settled in isolated places all over the District ; thickest in the Sultanates of Buhole, Buyombe, Butundwe, and Mwingiro.	about 3,000 (about 1,000)	About 50 muzzle-loaders ; bows, and arrows, throwing spears. Arrow-poison from the Washashi.	Without warlike past or capabilities.
3. WASUMBWA ; S. of Uzinja. Much mixed with Walongo, Watusi, Wanyamwezi, and Wasukuma. Larger part of the	about 4,000 (about 1,000) in the Mwanza District.	About 75 muzzle-loaders ; bows and arrows without poison ; javelins with lancet-shaped points. Leather quivers.	Coming from Uha, they were later conquered in the Central African migration of people by the Watusi (Wahuma), whose rule, however, they soon threw off. Later they made a suc-

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
with fugitives from, or impoverished members of, surrounding tribes.	understood by their neighbours. Swahili little known.	changing their dwelling places.	feathers, skins, gnu-tails, game, honey, and salt, for mealies, cooking utensils, ornaments, cattle for slaughtering, and women.

MWANZA.

Civilization little developed. Powerless sultans and village headmen.

Kizinja. Understand Wasuwi. Little knowledge of Swahili.

High cone-shaped grass huts, like those in Bukoba District. (Msonge). Yards with reed fences. Part live in villages, which are not easily defended ; part scattered in the banana groves. The villages are almost all on the lake. There is only a thin population living in the thickly wooded interior.

Chief occupation : catching fish. Chief food : bananas. Small cultivation of millet, potatoes, and manioc. About 2 to 3 thousand head of cattle, and also sheep and goats.

Organized by Government under chiefs, but without tribal cohesion.

Related to the Wazinja language. Little Swahili.

Huts on the Wazinja pattern. Scattered in clearings, in the middle of the cultivated fields. Not capable of defence.

Little cultivation of corn, but more manioc, beans, sweet potatoes. Few sheep and goats. Iron is got from the many deposits in the country. It is worked into axes, arrows, and spear-heads, which they barter for necessities with other tribes.

Politically of small importance. Influence of station perceptible. Powerless sultans.

Related to the Kisukuma language. Swahili widely spread.

Round mud huts with grass roofs after the Wasukuma pattern. Large villages without enclosure, but shut in and cap-

Much farming. Cultivation of rice, millet, sweet potatoes, manioc, &c. Little live-stock.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
<p>population in Tabora District. In Mwanza District mostly in the divisions of Msalala Mdogo, Bu-yombe, and Usam-biro.</p>			<p>successful defence against the invading Wangoni, coming from the S. Manner of fighting : surprise attack.</p>
<p>4. WASUKUMA ; S. of Speke Gulf to the Manyonga River in Tabora District, between Smith Sound and Masai steppe. Most thickly settled between Smith Sound and the Simiyu. In the S. mixed with the Wanyamwezi.</p>	<p>about 400,000 (80,000)</p>	<p>Over 3,000 muzzle-loaders ; throwing-spears, bows and arrows. Poison obtained from other tribes.</p>	<p>In former days wars amongst each other. Successful repulse of Masai inroads. In 1905-6 beginning of local risings (Sultan Makongobo of Mwanza). Enduring and tough in fatigues and privations. Can stand changes of climate. Have a good knowledge of the Protectorate and European customs owing to their having been employed as bearers and Askari. Mode of warfare : sudden attacks. Have not so far resisted Europeans, but have fled with their cattle.</p>
<p>5. WAKEREWI ; on Ukerewe island ; N. and E. shores thickly settled.</p>	<p>about 30,000 (about 6,000)</p>	<p>About 35 muzzle-loaders ; arrows, bows, spears.</p>	<p>Former warfare with invading tribes from the interior.</p>

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>They willingly tolerate German rule as necessary to their safety and prosperity. They are reserved and secretive towards Europeans. The influence of the Government makes itself felt everywhere, but energetic measures are often necessary. Powerless Sultans as far as South-East Magalla. No ruling family. Tribal organization. Generally in each sultanate many parties struggling for sultan's power.</p>	<p>Akin to the Wanyamwezi language. Swahili is widely spread.</p>	<p>able of defence. Formerly <i>tembes</i> and well-enclosed villages for protection against invasion of neighbouring tribes.</p> <p>Round, grass-covered clay huts with one entrance. Several farms surrounded with euphorbia hedges at the foot of the rock-covered hills. Lying far apart. Hardly defensible. In Nera and Uzmao there are large clusters of huts (up to about 400) in the open fields, surrounded by innumerable euphorbia hedges. Fairly defensible.</p>	<p>Industrious agriculturalists and cattle breeders. Very rich in cattle in the districts Uzmao, Nera, Magalla, Ntusu. Some donkey-breeding here and there. Various kinds of millet, manioc, sweet potatoes, little maize and sesame. Rice chiefly in Kayenze, Bukumbi, Stima, Urima, Nera, and Uzmao. Rich in cattle.</p> <p style="text-align: center;"><i>Cattle</i></p> <p>Uzmao 15,000 Zengeremo 10,000 Magalla 15,000 Nera 15,000 Msalala 4,000 Nhunghu 6,000 Ntusu 15,000 In Meatu, Masanza, Nasa, there is little live stock (tsetse). Here and there donkey-breeding.</p>
<p>Friendly attitude towards German rule. Influence of the Government increasing. Sultanates, with village headmen as subordinates.</p>	<p>Mixture of Kizinja and Kiheia. Swahili is understood.</p>	<p>Grass huts as in Uzinja. Big unfortified villages. Hardly defensible.</p>	<p>Fishing, cattle-breeding, and agriculture. Much banana and rice. Also cultivation of manioc and millet (<i>uwele</i>). About 6,000 head of cattle.</p>

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
6. WANYAMWEZI ; on the S. point of the Smith Sound.	about 10,000 (2,000)	See District of Tabora.	See District of Tabora.
7. WASHASHI and WANGORIMI ; to the E. and N. of Speke Gulf, on both sides of the Ruwana, settlements scattered widely over the whole territory. More thickly on the middle Ruwana and Grumeti. The peoples mentioned under 7-9 belong to the Washashi group.	about 30,000 (about 6,000)	Very few muzzle-loaders. Bows and poisoned arrows.	Under the oppression of the Masai a warlike development was impossible. When the incursions took place the Washashi tried to save themselves and their cattle by flight, or did service in reconnoitring against other tribes. The dread of hardships and privation, inability to stand changes of climate, their fear of unknown country, make these tribes of little use for war. Yet by hunting they have acquired great accuracy in shooting with bow and arrows and good training in reconnoitring.
8. WASANAKI ; NW. of the Shashi country, Ikisu ; scattered settlements.	about 20,000 (about 4,000)	As above.	Relying on the inaccessibility of the country, they long resisted the German rule. The Protectorate troops, after numerous expeditions, finally subdued them in 1905. They make sudden attacks and quick retreats, and defend the very difficult granite mountains.
9. WAKWAIA ; together with WARURI ; on E. bank of the lake between Speke Gulf and the Mara, including the thickly populated island of Ukara.	40,000 (8,000)	As above.	Formerly much local unrest, which made interference by Protectorate troops necessary. This country is no source of danger, as ancient feuds exist amongst the people. Tactics : sudden attacks.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
See District of Tabora.	See District of Tabora.	See District of Tabora.	See District of Tabora.
Formerly not favourable to German rule, sometimes offering passive resistance. In recent years a more friendly attitude. Influence of Government perceptible. About eighteen districts, each under its Sultan. Government by Sultan (introduced first by Europeans) is influential only in the Ikisu country. Under the Sultans are more or less influential village headmen (<i>Manangwa</i>). There is often enmity between Sultan and <i>Manangwa</i> .	Kishashi. Swahili is only spoken by the Sultans and village headmen.	Round clay huts, grass roofs, hidden in dense hedges of euphorbia and in bush, very difficult for attacking force to approach. Well adapted for aiding the escape of the natives and for fire from ambush.	A people living by stock - breeding, agriculture, and the chase, frequently changing their dwelling-places. Moderate amount of cattle, sheep, and goats. At Ikoma, as result of tsetse and want of water, there is little cattle or corn. Moderate cultivation of corn and field produce ; millet (<i>mtama</i> , more often <i>ulezi</i>), manioc, sweet potatoes. The fields in some cases are several hours' journey from the houses, mostly lying in the low grounds amongst the rivers and brooks.
There was no organization before the German rule. Only the family had cohesion. Families acknowledged authority of the witch doctors alone. The Sultans established by Government have little influence.	As above.	Villages hidden in the mountains. The approaches barricaded with stone walls as result of former danger from the Masai.	Cultivation of millet, sweet potatoes, manioc, maize, ground-nuts. Plenty of live stock.
Influence of Government increasing. Tribal organization as above.	As above.	As above.	As above.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
10. WASUBA : on lower course of the Mara.	about 50,000 (10,000)	As above.	As above.
11. WAGAIA : living in the stretches of land, about 25 km. wide, round about Shirati, in thickly populated settlements. A Nilotic tribe, akin to the tribe Kavirondo, living round Kisumu.	about 5,000 (about 1,000)	Few muzzle-loaders. After the manner of the Masai they carry spears and great shields of buffalo skin. War ornaments of ostrich feathers.	Serious conflicts with the Masai, to whom they offered brave and successful resistance. Employed by Military Station in different ways as auxiliary fighters. Good fighters. Mode of warfare : massed attack or surprise.
12. WANDO-ROBBO : in the Masai - Steppe between Ikoma-Sonyo, English frontier, Nyaraza-Steppe. The Wandorobbo are intermixed with English Masai in the vicinity of Olgoss. There are pure Wandorobbo in the Zerengeti steppe on the Syonera living as nomads. Only few kraals.	about 1,000 (about 200) In the case of war would probably be joined by the Masai from English territory.	No muzzle-loaders. Bows and poisoned arrows. Few spears.	During the great migration of the Masai, the Wandorobbo were either driven out or forced to submit. They are skilled shooters with the bow, and good reconnoiterers, otherwise not adapted for war. Well-known cattle-stealers. Method of war : night attacks.

XX. DISTRICT OF

1. WAHEHE : in the centre of the District round Iringa. Most thickly settled round Iringa.	about 25,000 (about 5,000)	About 800 muzzle-loaders. One stabbing spear, 3-5 throwing spears, and a shield for each man.	The seat of the tribe is the division of Ngruhe. The ruling family, the Quawa dynasty, has been in power since 1700. Through marriage Rungembe and Irole were joined to the country. Sultan Muyugumba (1855-79 ?) began the policy of conquest. He conquered Luhota, and the en-
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<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
As above.	As above.	As above.	As above.
Hostile when first German rule was established in 1898. Since their subjection have been loyal to the Station. There is influential rule by Sultans.	Speak their own Nilotic language. Little Swahili known.	Large villages in open situations. Not defensible.	Cultivation of corn as in Ushashi. Much cattle.
Have paid taxes during the last year or two. Are under influential headmen of their tribe.	A speech akin to the Masai language in Olgoss. In the Zerengeti steppe it differs. No Swahili. Interpreters among the Washashi in Ikoma and among the Wasonyo in the Arusha District.	Change their dwelling places in seeking pasture-land and water. Their kraals lie hidden in the bush and vary greatly in number and size. The cattle are kept in a round enclosure fenced with thorn. Round this are low grass huts plastered with cow-dung after the Masai fashion. The whole is surrounded by an outer barricade of thorn bush.	Cattle breeders and hunters. Food only meat and milk. At Olgoss very little cattle, sheep, or goats. In the Zerengeti only sheep and goats. Some donkey-breeding at Olgoss.

IRINGA.

Very mistrustful of Europeans. They need a just but firm hand. Energy, force, and caution are necessary in dealing with them. Influence of the Government is growing. German policy is to play the jealous chiefs against

Kihehe. Swahili is everywhere at least understood by individuals.

Large four-cornered huts covered with clay (*tembes*). Mostly isolated, or built in groups near the chiefs. Often capable of defence. There are occasionally roomy inner yards for cattle.

Prominent cattle breeders. Lately also more farming, but only for their own use. Maize, sweet potatoes, beans, little millet. Rice near Pawagga. In the whole District 106,775 oxen, 120,000

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
			larged kingdom forms Uhehe proper, while the countries conquered later are provinces of the Wahehe. So, too, with part of
<p>Usagara and the division of Mgololo, 1874-8 ? War of conquest against Merere, Sultan of the Wasangu. Usangu proper became a province of the Wahehe. About 1875 conquest of the Wambunga at Ifakara. About 1878 fights with varying fortunes against the Wangoni. Quawa (about 1879-1898) united all Uhehe under his rule after a fierce fight for the succession : about 1882 further bloody fights against the Wangoni under Chaburuma : about 1884 annihilation of the hordes of Wanyamwezi who had fallen on Uhehe. Fights in Ugogo about 1884 ; about 1886 conquest of the Wasangu in Uzafua ; about 1887 conquest of Usagara as far as Kilosa ; about 1888, fighting again with the Wasangu. After that fights for independence against Europeans ; 1891, annihilation of the expedition of Zelewski. Development of use of firearms among Wahehe warriors ; 1892-3, raiding and punitive</p>			
<p>2. WACHUNGWE ; E. of the Wahehe, on the frontier of the District, partly mixed with Wahehe. Thickly settled at Mfua and Muhanga.</p>	<p>about 10,000 (about 2,000)</p>	<p>Muzzle-loaders included in above number ; weapons as for Wahehe.</p>	<p>Conquered in early times by the Wahehe and quite absorbed by them. They share their campaigns, but are less capable fighters.</p>
<p>3. WASANGU ; SW. part of Iringa. Thickly settled from Madibira in a southern direction to Uten-gule (seat of the Sultan).</p>	<p>about 25,000 (about 5,000)</p>	<p>Firearms about 500. Other weapons as for the Wahehe.</p>	<p>Warlike, cruel, even occasionally successful against the Wahehe in the past, though not with lasting success. The Wasangu are supposed to prefer mass-attack. They are also good hunters and shots, living as they do in excellent elephant-hunting ground.</p>
<p>4. WABENA ; SE. part of Iringa District. Thickly settled round the Ubena post and the mission stations.</p>	<p>about 30,000 (about 5,000)</p>	<p>Firearms about 350. Small spears which serve for throwing or thrusting. Few shields.</p>	<p>Not very warlike, only in the N. part where they are mixed with Wahehe and Wasangu, the reason being that they have been slaves so long to the Wahehe. Chief occupation, farming, lately also cattle-rearing. No hunting in their region. Useful and industrious. Well</p>

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
each other. Organization in medium-sized chieftainships.			goats and sheep, 600 pigs, 455 donkeys.
<p>expedition (Schele). Storming of Quawa's fortress (Iringa) and his flight. Then return of Quawa and many raids of his warriors. Then the long and obstinate guerrilla war of Quawa against the Protectorate troops under Capt. Prince, which closed with the overthrow of the Wahehe in 1899. Only the border Sultanate in the east of the District took part in the rising of 1905-6. The ferment among the other Wahehe was suppressed by energetic measures of the Protectorate troops. Manner of fighting: skilful reconnaissance and quick communication. When near the enemy always in fighting formation, and with system of protection on the march. They are very fond of attacking an enemy camp at dawn or from ambush. Their already great capabilities for fighting are increased by the large amount of hunting they engage in.</p>			
Behaviour like Wahehe. The Sultanate of Uchungwe was artificially set up after the rising of 1905. Internal disturbance is likely after the death of the present (1910) ruler.	As above.	Near Iringa <i>tembes</i> on the Wahehe pattern. In the mountains groups of from 10 to 12 people live in straw huts.	No cattle in the S. of Uchungwe. Rice towards Mahenge.
Loyal to the German Government up to now, they are grateful also for their freedom from subjection to the Wahehe. They need a firm hand. Organization: hereditary head-sultan (Merere) with village chiefs (<i>Wadzagila</i>). German policy is not to let the Sultan become too powerful.	Kisangu. Swahili as for Wahehe.	As for Wahehe.	As for Wahehe. The stock of wild game everywhere provides a large part of their food. Good stock of cattle, sheep, and goats. Farming only for their own needs. Maize, sweet potatoes, beans.
Quite loyal to the Government and full of trust in the German rule. Organization: in great Jumbeships with little influence since the government was purposely handed over to the sub-Jumbes.	Kibena. Swahili as for Wahehe.	<i>Tembes</i> as for Wahehe. In the southern part clay huts with straw roofs.	Good farming, latterly also cattle-rearing. Necessaries also for sale, namely maize, eleusine, sweet potatoes, beans, peas, European potatoes, and bamboos for making <i>pombe</i>

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
5. WAKOTISAM-BA ; mixed people in the W. and N. frontier of the District. Thickly settled near Kipembawe, Ilangani, and Mp-wasa. (a) Wakimbu. (b) Wagogo. (c) Wasagara.	about 10,000 (about 2,000)	About 200 muzzle-loaders. Throwing and stabbing spears, few bows and arrows.	fitted for work as bearers or labourers, but not in the coast climate. Previously notorious caravan robbers. Had much to suffer from the Wahehe. Pass over into the neighbouring people on the frontiers. This mixture of tribes has no warlike qualities and has not yet come to the fore. See neighbouring tribes for manner of fighting.

XXI. DISTRICT OF

1. WAPOGORO ; mountainous central part of District, W. and N. border of Ulanga plain, Lochombero plain. Thickly settled to the N., E., and S. of the Muhulu mountains.	about 50,000 to 60,000 (12,000 to 14,000)	About 400 muzzle-loaders. Bows and poisoned arrows. Poison is mostly got from the bark of a tree.	The part of the tribe settled on Ulanga plain are subject to the Wabera and Wabunga. The other part of the people kept itself independent owing to its easily defended territory in the Lochombero plain, sheltered towards the west by the mountains. Slow to attack. Defence in hiding-places in the mountains.
2. WABUNGA ; Ulanga plain. Mostly thickly settled.	about 20,000 to 25,000 (about 5,000 to 6,000)	Few muzzle-loaders. Spears and axes. Native weapons are made by native workers. Source of supply for iron, mostly Indian traders.	Wandered from Ungoni and subjugated the indigenous people. Known formerly by the name of Mafiti. Very warlike people. They made raids as far as the coast and were the terror of their neighbours, like the Masai in the N. Manner of warfare against other natives : attack in mass

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>Dull, dirty, unwilling to work. Few wants. Organization : very small chieftainships, which are hostile to one another.</p>	<p>Mixed speech. Swahili is understood everywhere by individuals.</p>	<p>The scattered Jum-beships lie compactly in open places surrounded by fields. Villages built mostly as a large rectangular <i>tembe</i>, which serves as an enclosing wall. Within this are a number of small huts as well as the kraals for the few cattle. Not easily defended.</p>	<p>(native beer). Little millet and manioc.</p> <p>Very few needs in the way of food. Farming only in the neighbourhood of rivers. Cultivation of maize and millet. Salt and wild honey is sought in the country and sold at Iringa.</p>

MAHENGE.

Larger part of the people gave in to the German rule without fighting. Rest were overthrown by force of arms, particularly those on the Lochembero plain. In 1905-6 the tribes north of Mahenge Station were faithful, those south of the station and on Lochembero plain rose. They are under chiefs, whose influence is small.

At first conquered by the German rule after long fighting. They were the most redoubtable opponents in the District in the 1905 rising. They are governed by powerful chiefs.

For 1-6 :
Languages very closely allied, and tribes understand each other very easily. Also understand the frontier tribes like the Wahehe and Waluguru. Lively trade by barter. All tribes mixed through occasional marriages, especially Wabunga, Wadamba, and Wabena. Wangindo and Wapogoro mixed by migrations. Swahili is understood everywhere.

Dwellings of clay, not defensible. Huts mostly scattered ; only close together at the seats of the chiefs.

As No. 1.

Farmers. Cultivation of maize, negro millet, potatoes, and rice. Maize can be cultivated easily all the year round. Stock of cattle not kept owing to tsetse. Occasional sheep and goats, no breeding of donkeys.

Farmers. Chiefly rice cultivation with two harvests a year. Very small stock of cattle, sheep, and goats. No donkey-breeding.

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
3. WADAMBA : indigenous people of Ulanga plain. Thick settlements on Ulanga plain, in the W. part of the District.	about 15,000 to 20,000 (about 4,000 to 5,000)	About 160 muzzle-loaders. Long spear, shield, made by native workers. Source of supply for iron, mostly Indian traders.	formation. Against regular troops, ambush, for which the high growth of grass on Ulanga plain gives favourable opportunity.
4. WABENA : SW. part of the District. Thickly settled between Ruhuje and Mnyera.	about 12,000 to 15,000 (about 3,000 to 4,000)	About 100 muzzle-loaders. Highshields, throwingspears, made by native workers. Source of supply for iron, mostly Indian traders.	Almost completely subjugated by Wabena and Wabunga. Only on the Kihanzi river have they preserved two independent chieftainships. Not warlike. Manner of fighting : night ambush.
5. WANGONI : SW. part of the District ; E. of Ruhuje. Mostly small settlements, thicker on the lower Matisi and Mpitu.	about 3,000 to 4,000 (about 300 to 400)	Few muzzle-loaders. Spear, axe, long-handled knives, made by native workers. Source of supply for iron, mostly Indian traders.	Before the German rule they migrated from Iringa District and overthrew the Wadamba and Wapagoro. As opposed to these they are the ruling class. They have shown their capabilities for warfare in many fights. Mode of fighting : attack in mass formation.
6. WANGINDO and WADWEWE : very similar people in Mgende and Ndwewe divisions. Mostly small settlements, thicker in Mgende division.	about 10,000 to 15,000 (about 3,000 to 4,000)	Few muzzle-loaders. Bows and poisoned arrows. Wangindo also partly spear, axe, long - handled knives. Poison is mostly got from the bark of a tree, which grows among bamboos in Mgende.	Migrated from the S. Overthrown by the German power by force. A warlike people, feared by their neighbours. Manner of attack : ambush.
			They suffered very much from the Mafiti invasion. They defended themselves in the rough mountain-peaks of their land, which are often only climbable with the help of guides, by throwing down rock boulders. Not warlike. Manner of fighting : defence on the tops of mountains.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
Play no political part because of their dependence on other tribes. The independent chieftainships remained faithful in 1905-6.		As No. 1.	Farmers, fishers, and sailors. Chiefly cultivation of rice with two harvests a year. No stock of cattle. Scattered sheep and goats.
Overthrown without use of force by German power. Since then faithful, even in Quawa's time and in the 1905 rising. Ruled by powerful chiefs.		As No. 1.	Farmers, fishermen. Cultivation of maize, negro millet, potatoes, and rice. About 4-5,000 head of cattle. Sufficient stock of sheep and goats. No donkey-breeding.
Remained true to the Government in the last rising, and served as auxiliaries. Ruled by powerful chiefs.		As No. 1.	Farmers. Cultivation of maize, millet, potatoes, and rice. No stock of cattle.
They were subjected without difficulty to the German Government. They took part in the 1905-6 rising and later were unexpectedly fanatical owing to the influence of witch-doctors. They are ruled by chiefs, whose influence is small.		As No. 1.	Farmers. Cultivation of maize, millet, rice, and potatoes. No stock of cattle.

XXII. DISTRICT OF

Name of tribe ; seat of tribe ; where thickly settled.	Population (men fit for bearing arms).	Muzzle-loaders ; other arms.	Past wars ; capabilities ; methods of warfare.
1. WAHEIA.		Two breech-loaders ;	Before the German rule they had petty wars with the Baganda. The natives are cowardly, weak, and shun toil. When the natives fight amongst themselves great masses confront one another, mock at one another, fight a little, and then quickly break off their hostilities as soon as there are losses. Sometimes a war is ended by a combat between two chosen champions. They only defend themselves against trained troops and occupy caves. The Wazinja and Wasuwi, being hunters, are warlike by inclination. In a strange climate and especially when they cannot get banana food, the carrying capacity of the natives is very greatly reduced ; many die if they have strange food.
(a) Wandagabo. Bugabu.	18,000 (4,600)	1,363 muzzle-loaders in the District, divided thus :	
(b) Wangoza. Kiamtwara.	20,700 (5,700)	Sult. Kiziba 197	
(c) Wahamba. Kiana.	43,000 (13,700)	Sult. Kiana 249	
(d) Wanyangiro. Ihangiro.	49,200 (10,700)	Sult. Ihangiro 146	
		Sult. Kiamtwara 51	
		Sult. Bugabo 62	
		Sult. Karagwe 43	
2. WAZIBA.	26,600	East Usuwu 204	
Kiziba.	(7,700)	West Usuwu 51	
		West Uzambiro 114	
3. WAZINJA.		Indian }	
(a) Wazinja. East Usuwu and Kimoani.	46,500 (9,500)	Arabs } 242	
		Waswahili }	
(b) Wasuwi. West Usuwu.	24,500 (5,000)	It is unlikely that firearms were smuggled in from Uganda.	
(c) Wazambiro. Uzambiro.	10,000 (4,200)	Arms in the N. are bad, long-shafted spears with a small blade. They use hatchets (<i>mohoro</i>) and, in parts, shields of plaited straw.	
4. WANYAMBO.	25,000	Bows and arrows are only found infrequently here, but often in the south.	
Karagwe.	(5,000)	Poisoned arrows are known, but not used everywhere.	
5. WAGANDA or BAGANDA.			
(a) In Buddu.	6,600 (1,500)		
(b) Town of Bukoba.	700 (200)		
(c) Mission.	1,100 (250)		
(d) Isle of Bumbide.	1,800 (400)		

NOTE.—The census of 1910 gave about 253,000 natives. Up to Karagwe the land is all thickly settled.

BUKOKA.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>On the whole their attitude towards their governors is loyal. The Wahamba were never refractory. The Wangoza and Waziba were overthrown in 1895 with little bloodshed. With the Wanyambo and the Wazinja, a demonstration of military force quelled them at once. The Wasuwi in West Usuwi on the borders of restless Uha are inclined to insubordination. Since 1900 there has been no further military undertaking worth noting in the province. The influence of the German rule is clearly recognizable. The Sultans and their <i>katikiro</i> are its instruments. According to native law, the Sultan (<i>mukama</i>) in former days ruled his land despotically, he owned all land and cattle, and was lord of life and death. He has now no longer the ultimate authority, and only wields a subordinate sway. All cultivated land still belongs to the Sultan, yet the natives have bestirred themselves to obtain at least the cattle as their private property. 'Kultur' diminishes the influence of the Sultans (occasionally a reason for revolt).</p>	<p>Kiheia ; in the S., the kindred Kisuwi. Swahili is spread through the whole District, but the average man does not yet speak it. The population is intelligent ; many of them, especially the younger people, can read and write.</p>	<p>Grass or reed huts in villages, mostly hidden in banana thickets. The villages are not capable of defence ; the villages of the Sultans are usually surrounded by high, but weak palisades.</p>	<p>Their chief food is bananas ; also ground-nuts, sweet potatoes, manioc, beans, eleusine, and poultry, in parts also European potatoes. Millet is mostly in the south. There is fishing on the lake, and in the rivers with rod and basket. There are sufficient food-supplies in ordinary years for troops operating ; they should be ordered in advance from the Sultans. If other supplies fail bananas serve as nourishment. There is scanty food-supply in Karagwe : additional supplies from the other sultanates. There are a great number of big-horned cattle, and many goats. Fewer sheep. Numbers in 1910 : cattle, 46,000 head ; sheep and goats, about 57,000 head. Scarcely any donkeys to be had.</p>

XXIII. DISTRICT OF

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
<p>1. WATUSI: scattered over Ruanda, Urundi, and Uha as the dominant class. Of Hamitic or Semitic race. Thickest in the districts of Buganza (Mohazi Lake), Nduga (Nyanza), Bwishasha (Mutara).</p>	<p>about 25,000 ? (about 5,000)</p>	<p>Few muzzle-loaders. Danger that, with desertions of Congo Askari, breech-loaders may come into the country. Other weapons, shield, spear, bow and arrow, long two-edged knives in wooden sheaths, on otter-skin belts. Arrows without poison, but with barbs on the iron points.</p>	<p>The Watusi, at the time of the Central African race-migration from Galla-land, invaded Ruanda, and subjugated the aborigines. Being well organized, and led with a powerful hand, they were able formerly to keep their superior position against the unorganized aborigines living in the mountains in spite of their superiority in numbers and physique. Later wars to subjugate neighbouring races, or seditious under-sultans. Their powers of resistance to unaccustomed exertion, or to changes of climate, food, or general conditions of life, are weak. 600 men of the King's Bodyguard, formed of the sons of the under-sultans, receive a military upbringing and education. After completion of education, discharged, and new drafts are substituted. Leaders change every four to six years. Military value small. Manner of fighting: surprise attack at dawn: on advance of the enemy, flight, taking along cattle, wives, and children.</p>

RUANDA.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>The ruling Watusi and the Sultan Msinga have from the beginning adhered loyally to the German rule. The fear of German superiority, and the help of the Government against the refractory under-sultans were the reasons for this. The influence of the Government in the country is up till now non-existent. One contents oneself with acting on the country through the sultan. He is called Mwami, and dominates all Ruanda. He is unlimited master over body, life, and belongings of all Wanyaruanda, and gives away the land-fiefs, shield-fiefs, and cattle-fiefs to his greater chiefs and other Watusi. Land- and shield-fiefs seldom in one hand. Through the greater chiefs, and the chieftains, there are further and sub-fiefs to the under-chiefs (watwale). Sultanates purposely scattered over widely separated districts and villages. Mistrust between the sultan and his chiefs. Detention of the latter at the Court of the Sultan (organization of the bodyguard from the sons of the chiefs as hostages). Otherwise many of the chiefs are only</p>	<p>The Watusi have adopted the language of the subjugated Bantu peoples. Swahili is unknown.</p>	<p>High round huts of wooden frames covered with grass. The farm buildings are surrounded by hedges of euphorbia or fig-trees. The homesteads of the greater chiefs are somewhat capable of defence, being shut-in enclosures with partition-walls. Watusi are generally on the top of the mountain, Wahutu generally settled on the slopes.</p>	<p>Only cattle breeding. Chief means of subsistence, meat and milk. The few vegetables are produced by the Wahutu or exchanged for the produce of cattle - breeding. About 250,000 head of cattle. Many sheep and goats.</p>

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
<p>2. BATWA or WATWA (Pygmies¹): scattered among the Wahutu. Only two tribes on the Mru-shasi swamp.</p> <p>¹ See p. 23.</p>	about 5,000 (about 1,000)	Like the Watusi.	Particularly warlike, violent, and cruel. The Batwa of the chiefs Bossebya and Grue have terrorized the neighbourhood over distances of 2 to 3 days' march, in spite of their small number. They desolated large tracts and lived by robbery and plunder. Manner of warfare : sudden attack, skilful driving of cattle, quick retreat to inaccessible regions (caverns, swamps, and bush).
<p>3. WAHUTU: Bantu negroes subjugated by the Watusi. In this district they are divided into Waler, Wakiga, and Wahoro on the north border, Wanyamba on the east border, Wanyakisaka in Kisaka, and Wanyaruanda-Wahutu in the rest of Ruanda. To the S. of lake Kivu much mixed with the Wanyabungu, a race closely related to the Man-yema. Very closely settled in the SW. and NW. corner of the Kivu, and closely settled on the Nyawarongo and Mkunga.</p>	500,000 to 1,000,000	Like the Watusi.	In general not warlike. Have allowed themselves to be subjugated by the numerically inferior Watusi. Exceptions are the inhabitants of the mountain-peaks (Wakiga) who are particularly warlike and violent, and have mostly withdrawn themselves from the influence of the Watusi. Manner of warfare like the Watusi and Batwa.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>nominally under the Sultan. Practically they are quite free and not obedient to the orders of the Sultan (in West Mpororo on the Vulkan lakes, on both sides of the Mkunga River, in Buyenzi, and South Mukinjagga).</p> <p>Hostile attitude towards the German rule. The influence of the Administration is non-existent. No tribal organization. A few chieftains have submitted to the Sultan of Ruanda.</p> <p>Without tribal organization and ruled by the Watusi.</p>	<p>Kinyaruanda.</p> <p>Kinyaruanda, Wanyakisaka, and Wanyambo dialects.</p>	<p>Like the Watusi, but poorer.</p> <p>Like the Watusi.</p>	<p>Agriculturalists, hunters, potters, and smiths.</p> <p>Chiefly agricultural. Few cattle, which they have got from the Watusi. Cultivation of beans, peas, millet, eleusine at Ishangi ; maize, sweet potatoes, yams, bananas.</p>

XXIV. DISTRICT OF

<i>Name of tribe ; seat of tribe ; where thickly settled.</i>	<i>Population (men fit for bearing arms)).</i>	<i>Muzzle-loaders ; other arms.</i>	<i>Past wars ; capabilities ; methods of warfare.</i>
<p>1. BATWA or WATWA ; possibly aboriginal ; are despised and disunited. Potters and carriers : about 3-5 per cent. of the population.</p>	<p>1,500,000 to 3,000,000 (300,000 to 600,000)</p>	<p>On the coast and in the Rusisi Valley, 800 muzzle-loaders ; a few muzzle-loaders in East Urundi. Probably a few <i>Watwale</i> possess some breech-loaders obtained from deserters from the Congo. In 1905 five breech-loaders were taken from them. Spears, bows and arrows with smooth, long tips, not poisoned, rarely sickle-axes. Weapons are made in the country locally, chiefly in North Urundi.</p>	<p>Numerous early wars, mostly of no importance ; but they have always repulsed the inroads of strangers. The conquest of Mirambo in South-East Urundi and their successful stand against Rumaliza are well known. They have shown hitherto small capacity for war. They attack in close formation, but have hitherto not been able to carry it out against breech-loaders. It is possible, however, that they may lose in time their dread of white men and breech-loaders. In wartime they drive their cattle to other friendly tribes and hide their wives and children, provisions, and household utensils in the swamp thickets. Cattle that have been taken from them they try to recover by night. They have very little power of enduring other climates or different food and are particularly subject to malaria.</p>
<p>2. WAHUTU ; probably have migrated from the S. Belonging to the Bantu tribe : 90 per cent. of the population.</p>			
<p>3. WATUSI ; have penetrated from the north ; a Hamitic pastoral race ; the ruling class about 5-7 per cent. of the population. Collective name for Watusi and Wahutu is Warundi. Warundi, on the coast of Tanganyika, partly mixed with Wabwari from the Belgian Congo. Most thickly settled on the coast strips and the valleys of the bordering mountains, in Central Urundi, Lusokosa and Banzabugabo, and to the south of Muyaga.</p>			

URUNDI.

<i>Attitude towards German Government ; its influence ; tribal organization.</i>	<i>Language ; use of Swahili.</i>	<i>Dwelling-places ; how far defensible.</i>	<i>Manner of life and subsistence ; cattle ; donkeys.</i>
<p>German policy since 1909 has had for its aim to create several independent sultanates, and play them off against each other. Present Head Sultan Mutaga (born about 1900). He has in reality very little influence. The real rulers are the party of the elder sons of Kisabo, Serushanya at the head, born about 1885. Real influence only in Central Urundi and in a part of the south, where Kisabo's sons reside. The Watwale in the north, north-east, south-east, on the coast of Tanganyika, and in the Rusisi valley, are inimical or at least passive towards Mutaga. Now quite independent of the Mtwale Kilima in the north of Uzumbura. As long as there is no residency in the interior of the country, the influence of the Administration is small. The parties of Mutaga and of Southern Urundi are the most opposed to German rule.</p>	<p>Language is a Bantu language, very like Kinyaruandu. In and around Uzumbura there are many Warundi speaking Swahili ; otherwise Swahili is spoken only in mission stations.</p>	<p>Light straw huts with large or small kraals according to the number of cattle. Not very defensible. The fencing round kraals mostly green Milumba trees joined with plaiting.</p>	<p>Watusi are only cattle-breeders. Sustenance entirely meat, milk, and <i>pombe</i>. Wahutu are industrious field labourers. Much fish in the Tanganyika Lake, bananas, manioc. In the Rand mts. principally bananas. Other produce : beans, peas, maize flour, millet flour, sweet potatoes ; much <i>pombe</i>. Large numbers of cattle, 100,000-150,000, as many sheep and goats.</p>

CHAPTER IV

HUMAN DISEASES, SANITATION, ETC.¹

Malaria extends over the whole Protectorate except the most elevated parts. It is carried by the *Anopheles* mosquito, and is caused by the bite of the female. The incubation period is about 10 days. The malarial parasite can be destroyed by quinine, which is most effective if used beforehand, as it then comes into contact with the parasite when it is young and can offer little resistance. For curative treatment the dose of quinine is 15 grains (1 gramme) a day, preferably in three or four doses. This must be continued till the temperature has been normal for two days. Quinine must then be taken at longer intervals; the first interval should be 2 days, followed by 2 days' treatment, the second 3, followed by 2 days' treatment, the third 6. After this the 2 days' treatment should be repeated every week for eight weeks. If a relapse occurs on the 5th day of the week, quinine must be taken every 5th and 6th day instead of every 6th and 7th. For preventive treatment the dose is 15 grains on each of 2 successive days every week, to be continued 6-8 weeks after leaving the infected area.

Quinine prevention can reduce the cases of malaria from 33 % of the population to 20 %; and it affords a certain cure. But by far the most valuable method of prevention is the destruction and avoidance of the mosquitoes. Mosquito-nets should always be used. They should have 10 holes to the linear inch, this being the largest mesh which is perfectly safe; and care must be taken to see that they are undamaged, properly secured under the mattress, and contain no mosquitoes. No part of the body must be in contact with the net; as in that case the mosquito can bite through it. The insect does not bite in the daytime, though other (harmless) mosquitoes do; it begins at sunset and is most dangerous immediately after that hour. It is therefore necessary in the evening to protect the face, neck, and hands with gauze; also the ankles with puttees, gaiters, or long boots.

It is still more valuable, if possible, to destroy the mosquitoes, especially in the early stages of their growth. They lay their eggs in

¹ For diseases of animals see Ch. VIII, Resources, under the head of Stock-farming. For the tsetse-fly disease of oxen see also Ch. XI.

stagnant water, in which the larva and pupa remain till they reach maturity. This takes from 2 to 4 weeks. All tanks and vessels containing water should therefore be emptied, thoroughly rinsed, and filled with fresh water every week, or, if that is impossible, carefully screened with gauze; search should be made for stagnant pools, which must be filled up; tins and pots lying about, which might hold water, must be destroyed; low bush must be cleared to such an extent that the sun can dry up the pools in it; and certain trees (e. g. the baobab) must be examined for pools of water held in their branches, which are a favourite breeding-place. Pools that cannot be emptied may be rendered harmless by pouring a film of paraffin upon them; this kills the larvae. Measures of this kind have met with entire success in stamping out epidemics of malaria.

Black-water fever is a development of malaria, generally in cases where quinine is used inadequately or not at all. It is recognizable by the blackish colour of the urine; which, however, must not be confused with the darkened urine common in ordinary cases of fever. It is sometimes thought to be caused by quinine, but this is a mistake. It does, however, often appear when a large dose of quinine is taken after long abstention during a bout of malaria. The only treatment is to discontinue quinine and to drink large quantities of water; after an attack quinine must be recommenced with great caution and in very small quantities, 1 or 2 grains a day. If the black-water symptoms do not reappear this may be gradually increased to the full dose of 15 grains a day, which is required for the cure of malaria. The treatment then resembles that of ordinary malaria. The death-rate in 147 cases among German troops in East Africa was 25%; but the disease can be prevented by proper treatment of malaria. Death is generally due to exhaustion after the disease has run its course.

African relapsing (or recurrent) fever is carried by a tick which avoids the sunlight and lives in houses, rest-houses, and markets, among trees, and sometimes in the ground. It emerges at nightfall and causes, by its bite, the fever, which appears after an incubation period of 5 to 7 days. All native houses and caravan stopping-places must be regarded as infected by this fever. The method of prevention is to avoid domestic vermin; i. e. not to use native beds, bedding which has been in the hands of a native caretaker, or old camping-grounds; the last named are, however, fairly safe in the daytime. If it is necessary to encamp near native huts or old camping-grounds, the ground (preferably a sunny place) must be swept clean; the legs of camp-beds should be bound for an inch with string soaked every few days in paraffin; and mosquito-nets may be used.

Some natives have acquired a certain immunity, but not all ; care must therefore be taken that posters, &c., do not contract the disease, as in that case an expedition may be seriously hindered. Eight or nine separate relapses extending altogether over a month or more may occur.

Treatment by quinine is useless. The recognized cures are salvarsan and mercury. The former is the best treatment and almost always prevents relapses. The latter is used in the form of intramuscular injections of *Hydrargyrum salicylicum*, 1 part to olive oil 10 parts ; 1 c.c. weekly for 6 weeks. A number of doses in sealed glass capsules should always be carried on expeditions. Other preparations of mercury can also be used ; for instance, grey ointment, of which 3 grammes (45 grains) must be rubbed into a different part of the body every evening for 20 days. After 5 applications, but not before, the skin should be washed with hot water and soap and the underclothes changed. The teeth must be carefully and frequently cleaned and the mouth rinsed as often as possible to prevent damage by the mercury.

Dysentery.—The chief symptom is very frequent slimy and bloody stools. It has two chief forms ; one caused by amoebae and the other by bacilli. In either case the simplest treatment is a purgative (castor oil, or 5–10 grains of calomel) followed by a diet of milk, gruel, soup, rice or maize meal, with red wine or canary, and application of hot bricks or hot sand-bags to the abdomen. In cases of amoebic dysentery emetine has proved of great value.

The infection comes from impure water or vegetables. All water, especially after rains, must be boiled ; and salads, raw vegetables (e. g. tomatoes), and fruit must be avoided on expeditions.

Sleeping sickness is caused by the trypanosome, a microscopic parasite which exists harmlessly in the wild animals over a great part of Africa. It is conveyed to human beings by the tsetse-fly (*Glossina palpalis*, *Glossina morsitans*, and perhaps other species of the same genus). The disease is accompanied by fever, wasting, and (especially in its advanced stages) extreme lethargy. Originally confined to the West coast, it extended during the last 10 or 20 years of the nineteenth century into the interior, where it has proved extremely fatal, especially in Uganda and the Congo. The parts of German East Africa most subject to it are the west and north-west ; but the tsetse-fly is very widespread (see Chapter XI).

No specific treatment has yet been established, though good results have been obtained of late years with prolonged treatment. It is best to avoid tsetse-bites by wearing sufficiently thick clothing, gloves, and a veil.

Hook-worm disease, ankylostomiasis, helminthiasis, miner's anaemia.—Common in the Protectorate as in most other tropical countries. It is caused by a small parasitic worm (*Ankylostomum duodenale*) about $\frac{1}{2}$ to $\frac{3}{4}$ in. long, which lives in the intestines, clings to their inner surface with hooks on its jaws, and sucks the blood. Their eggs pass out in the excrement and develop till, by some chance, they enter in a larval form the body of a new host. This they do by the mouth, or by the pores of the skin. Soil pollution is thus the chief means of spreading the disease. Pain in the stomach, capricious appetite, constipation followed by diarrhoea, dirt-eating, pallor and anaemia, and a small and unsteady pulse are the most marked symptoms of the disease; in extreme cases they are followed by dysentery, haemorrhages and dropsies, and death. The parasites thrive in an environment of dirt, warmth, and moisture; hence a dry or cool climate does not easily admit the disease. The precautions are sanitary (control of latrines, &c.; destruction of refuse by fire when possible); and the simplest treatment is thymol taken internally, which expels the worms.

Snakebite and poisoned arrow-wounds.—There is no certain antidote. The wound should be enlarged (the arrow pulled out) immediately, and a free flow of blood encouraged, which will tend to wash the poison away. The limb should be bound tightly, between the wound and the heart (but not for too long, or mortification may set in), and a large quantity of alcohol drunk ($\frac{1}{2}$ bottle of whisky or brandy). Help is sometimes afforded by cauterizing the wound, pouring in spirit of sal-ammoniac or inserting crystals of permanganate of potash.

Water.—It is always safest to regard water as infected, and only to use it after boiling. Filtration is not sufficient, and may, if the filters are not carefully sterilized, do more harm than good. It only serves to clear the water, which should always be afterwards boiled 10 to 15 minutes. The risk of dysentery from salads, &c., is diminished by washing the leaves in boiled water only. Water can also be cleared by throwing in a little alum and stirring for 10 minutes: 20 grains are generally enough for 10 gallons of water.

Wells should be dug towards the end of the dry season, and sunk a yard below the lowest level to which the surface of the water recedes. The shaft should be walled, if possible, and a solid wall must be built round the mouth to prevent the influx of impure surface-water. Wells must be as far as possible from latrines, and it is desirable to have separate wells for washing and drinking. Washing at a drinking-well is to be avoided.

If river-water must be used, care must be taken that the banks of

the river are uninhabited for at least $\frac{1}{2}$ mile up-stream. Natives should be prevented from using this $\frac{1}{2}$ mile for any purpose, as they are in the habit of throwing all refuse into running water.

When using running water, and even more when stagnant water alone is available, all should be boiled, even washing-water. This is not always possible, but water for drinking, cooking, and cleaning the teeth should always be boiled 10 to 15 minutes. It must be remembered that boiled water, while theoretically safe, is always liable to reinfection from hands, vessels, &c., before it is used.

Latrines.—The usual precautions must be carefully taken; e. g. the trench-bottoms must be daily covered with a layer of earth, should be surrounded by wind-screens, and as far as possible from the water-supply; they should have a ridge round the lip to prevent flooding by surface-water, &c. All the Askari understand the construction of latrines. Lack of care tends to spread hook-worm disease (q.v.), typhoid, &c.

CHAPTER V

DISTRICTS

Topography—Climate—Diseases.

THIS account is based on a German authority writing in 1911. It deals with the physical features of the different Administrative Districts, especially as they affect military operations, and includes notes on the rainfall and the prevailing diseases (with the exception of tsetse and of coast fever and of other animal diseases, on the distribution of which some remarks will be found in Chapter XI). Allowances must be made for possible changes in the last few years.

The different terms applied to the various sorts of tropical vegetation are explained in Chapter I.

I.—DISTRICT OF WILHELMSTAL

The District may be divided into four regions : (1) West Usambara, (2) South Pare, (3) the Masai steppe, and (4) the Uмба steppe.

(1) **West Usambara** is separated from East Usambara (Tanga District) by the Lwengera valley, which at the same time forms the boundary of the province. It is for the most part a compact broken mountain country, falling steeply to the Pangani (Ruvu) and the Mkomazi in the south, and to the Uмба in the north, and separated from the Pare mountains by the deep valley of the Mkomazi. In the interior there is rolling country in many parts, but there are many bold mountain ranges rising to 4,900–7,500 ft. (Mzale, about 7,400 ft.; Chembogo, about 7,500 ft.; Shume forest, 6,725 ft.; Kwagorotto, 6,695 ft.; Myanko, 7,280 ft.), and separated from each other by deep ravines with precipitous sides. The bases of the mountains are surrounded by a belt of tropical bush, varying in density and breadth, and changing into tropical forest on the higher slopes. Zakare, Balagai, Mzumbei, Boga, and Shume are extensive forest regions. On the other hand, the region immediately to the S. of Wilhelmstal station (capital of the District) (Krahl, Kingo, Zerei) is open country. Plantations (coffee, wattles) are laid out at various places throughout the mountains. The coffee plantations are dense (no wide fields of fire). Four-year-old plantations of wattles (*Gerberacacias*) give a field of fire up to 55 yards. Plantations and

pasture-lands are frequently surrounded by wire-fencing. Extensive areas round Wilhelmstal are planted by the German forest authorities with wattles, eucalyptus, rubber, cedar, and other trees. The Lwengera valley is partly open country and partly a grassy steppe thickly covered with forest. The Lwengera river, which is about 11 yards broad and flows over a stony bed, can always be forded, except in the Mfunte country, where it forms a papyrus marsh very difficult to cross. SW. of the mountains, between the Pangani, the Mkomazi, and Lake Manka, are isolated mountain groups with rounded summits, rising abruptly from the plain. The highest are the Mafi mountains (4,660 ft.).

The Pangani river (many crocodiles) is about 20–35 yards broad, very deep, and unfordable at all seasons. The Mkomazi (numerous crocodiles) is only unfordable after heavy rains. Both rivers are bordered with forests. Those on the Pangani above its junction with the Mkomazi consist of raffia palm. The Mkomazi becomes a marsh in the neighbourhood of Lake Manka. This lake can be forded in the dry season (crocodiles, slightly brackish water). N. of it is an extensive marsh, which unites with the marshy district of Mkomazi and is impassable in the rainy season. In the country between the Pangani and the Mkomazi, besides the groups of hills mentioned above, there are grassy steppes with trees or clumps of bush, wooded plain, and forests. Dense forest generally on the hills : open forest on the summits of the Mafi mountains.

(2) **South Pare**, separated from Middle and North Pare (Arusha District) by the Zame pass. A compact mountain group, with sharp ridges, steep slopes, and deep ravines, running in a general direction from N. to S. : heights up to over 6,500 ft. On the W. the country falls steeply to the Masai plain : on the E. it is cut up into ravines and valleys by the various streams which flow into the Mkomazi. To the N. are the separate mountain ranges of Kamorei and Ngarangani. In the valleys and less precipitous ravines are the fields of numerous native settlers. On the mountain-slopes down to the plains are bush and virgin forest. On the mountain summits grow only ferns and heather. The Pangani in this region is as described above (under West Usambara), but with an extensive flood area. The streams which form the Mkomazi are passable at all points. To the E. of South Pare they form the Ngandu marshes : reedy banks : not passable.

(3) The **Masai** steppe undulates from the Pangani river in a westerly direction, rising to about 1,000 ft. Then comes a plateau without hills rising from it. Steppe with short or long grass : many thickets of bush : steppe forest in places. Water to be obtained with

certainly only from the Pangani. Water-holes known only to the Masai and the Wandorobbo.

(4) The **Umba** steppe is a flat plain, with a light growth of bush scattered over it. On the British frontier it is intersected by the Kilimangombe range (2,600–2,800 ft.) which rises abruptly out of it. There is a great scarcity of water everywhere. Water is to be found permanently only in the Umba river, which rises in West Usambara. The region is rich in big game, and is settled only at the foot of the mountains.

Climate.—The great rains in the larger part of the District last from the middle of April to the middle of June. The lesser rains are in November and December. The order is reversed in the Pare mountains, in the northern part of Usambara, and in the steppe regions bordering on those regions (see Appendix I).

In the plains and along the Usambara railway the climate is very hot and sultry. It is cool in West Usambara, and in the Pare mountains it is often quite cold in altitudes above 3,000 ft. (June and July). Warm clothing, tents, blankets, &c., are there absolutely necessary for Europeans and natives. Hoar-frost is frequent at morning. The sudden change in temperature with altitude makes caution necessary.

Diseases.—Malaria is endemic in the low-lying districts. It is probably not to be caught in the hills, but is easily brought up thither from the plain. There is special danger of disease on the railway line: malaria, typhoid, dysentery, and helminthiasis. The last-named disease is common throughout the province. There is a native hospital at Wilhelmstal (under a subordinate medical officer) and another at Mombo. In Wugiri there is a convalescent home for Europeans. In Mlalo there is a Lepers' Home at the Protestant Mission. In Lutindi there is a lunatic asylum supported by the Protestant Union of East Africa. For tsetse see Chapter XI.

II.—DISTRICT OF TANGA

The District of **Tanga** may be divided into three regions: (1) coastal zone, (2) hill country of East Usambara, (3) the Umba steppe.

(1) The **Coastal Zone** from the Indian Ocean to the foot of the Usambara mountains. The coast is flat and much indented, and has several good-sized bays (bay of Yassin, Moa bay, Manza bay, Tanga bay, Mtangata bay). The bay of Tanga is one of the chief harbours of the colony. Moa bay is accessible to small steamers (steam lighter *Martha* of the Deutsch-Ost-Afrika Linie, and the Government steamer flotilla). There are a number of islands off

the coast. The largest, the British island of Pemba, is divided from the mainland by the Pemba Channel. The others are very close to the coast. The largest are Kirwi, Kwale, Yambe, and Karange. Both coast land and islands consist of coral rock covered with thick virgin bush. In the bays, which are nearly all river mouths, there are mangrove swamps. On the banks of the Zigi and the Mkulumuzi these extend far inland. The coast region as far as the foot of the Usambara mountains is a slightly undulating upland country rising towards the interior. The Bondei heights (called the Mkuze (Mkuzi) by the natives) in the S. are the only higher hills. The vegetation consists mainly of virgin bush which is very difficult to penetrate. There are a few small flat steppes. These occur between the coast and the Bondei hills, and to the E. of Korogwe in the valley of the Pangani. There are open spaces round the native settlements. Along the Tanga-Korogwe railway most of the land has been cleared and either cultivated as plantations or declared reserves for the natives. Large sisal-hemp plantations offer a good field of fire, but by piling up the plants one can quickly construct very difficult obstacles. The rubber plantations obstruct the vision, but as the trees are mostly planted in rows they afford a field of fire of 100 to 200 yards. The cotton fields do not present any tactical difficulties.

The rivers N. of the Zigi are short coast streams flowing with a very sharp slope in deep cuttings in the coral rock. The steep banks are thickly wooded. It is only after rainfall that the beds carry water which rises very rapidly, and the streams may be dangerous to cross on account of the rapidity of the current. However, they sink quickly and leave the passage free again. The Zigi, Mkulumuzi, and Koreni never run dry. In the dry season they can be forded after the crocodiles have been driven away. The banks are steep and wooded. The crocodiles are numerous and dangerous, especially in the Koreni, which loses itself in mud and swamp, so that its mouth cannot be discovered.

Baths have been installed at the Amboni sulphur springs (on the Zigi). The Zigi caves near Tanga are apparently rather remarkable.

(2) The hill country of **East Usambara**. The principal mountain ranges are the Handei (4,180 ft.) and Mlinga mountains in the S., the Nilo (Nielo) and Ngonja (3,430 ft.) in the N. The ranges are precipitous with deep-cut valleys and ravines. In the valleys there is mostly thick bush interspersed with extensive wild banana groves. On the slopes there is impassable forest, except where there are plantations. The ridges and jagged peaks are practically bare.

There are many extensive plantations of rubber, sisal-hemp, and coffee.

The Zigi first flows eastward from the Handei mountains; then at its junction with the Kihuhui (which flows from the S.) it turns to the N. through the broad slightly undulating valley between the Handei and Mlinga ranges until it reaches the south of the Ngonja mountains, where it bends eastwards and enters the coast district. Numerous brooks and river-beds join the Zigi, bringing clear water from the mountains. In the rainy season the Zigi forms an obstacle between the mountains which it is difficult to pass (thickly overgrown steep banks, strong current, crocodiles). The tributaries also have steep banks, thickly covered with bush and creepers.

(3) The **Umba Steppe**. Only the eastern portion lies in the District of Tanga. The larger part is in the District of Wilhelmstal. It is flat without undulations worthy of note. Some of it is open country, in places dotted with islands of bush, and there is tall grass everywhere. In the north is the river Umba, about 50 ft. broad in its middle reaches. It never runs dry, and is difficult to cross in the rainy season (crocodiles). The tributaries in the plains are only rain-streams. In the dry season it is very difficult to procure drinking-water.

Climate.—The short rainy season is in October and November in the coast region and the Umba plains, while in Usambara it lasts from September to January. The long rainy season extends from March to July in all the regions. Throughout the District there are considerable rainfalls at other times besides the rainy seasons. (See Appendix I.) The climate on the coast and the Umba steppe is sultry and very hot. Marches are very trying, and even at night one cannot count on its being much cooler. Towards the interior the climate becomes better. Warm clothing (*litevkas* for the Askari, rugs for the porters) is absolutely essential in the Usambara mountains. It is necessary to be careful on account of the sudden change of temperature between the coast and Usambara, especially as the mountain-climbing is very severe on the heart and causes copious perspiration.

Diseases.—Eighty per cent. of the population is infected with helminthiasis, and leprosy occurs. Malaria is endemic in the coast district. It is necessary to be careful of the swarms of mosquitoes in the bath-rooms and water-closets in Tanga. There is always danger of plague being introduced from Zanzibar. For tsetse and coast-fever see Chapter XI.

III.—DISTRICT OF PANGANI

The relief of this District shows in general a gradual rise of the terrain from the coast towards the interior. Three different kinds of terraces can be clearly distinguished. (1) The strip along the coast (25 to 30 miles broad) in the S. between the rivers Mligazi and Msangasi is almost completely flat. N. of the Msangasi to the Pangani (Ruvu) river slight undulations appear which N. of the Pangani are more considerable and attain greater height. (2) The coast strip, which is, generally speaking, flat, is succeeded by a hilly country which begins near the Bondei hills (N. of the Pangani) and the Gombe and Gendagenda hills (which are continuations of the Bondei hills to the S. of the Pangani) and goes W., increasing in height till it reaches its highest summits in the Handeni mountains (2,230 ft.) and their southern continuation. (3) The most westerly terrace is formed finally by the mountain land of Nguru, whose summits reach a height of over 6,500 ft.

By far the greatest part of the District is covered with thick bush. Open steppes of no great extent are often to be found in the flat coast region. Thick rank grass 2 or 3 yards high makes walking difficult and prevents one from seeing any distance. It is only when the burning of the steppes takes place in October and November that this difficulty is absent. Great steppe-regions are found NW. of the route Korogwe-Handeni-Mgera. This is the SE. corner of the Masai steppe, which here reaches into the Pangani District.

European plantations are numerous in the District. On the coast (S. of Pangani) are the great sisal-hemp plantations at Mwera (Mbera) and Kikogwe belonging to the German East Africa Company. To the N. of the Pangani river are Buschirihof, Mundo (? Mindu), Lewa, Zonga, and others. South of the Masai steppe there are plantations at Zindeni, Handeni, Kwediboma, and other places. Mostly rubber and sisal-hemp.

The District is cut through from W. to E. by two great rivers, the Pangani or Ruvu and farther S. the Msangasi. The Pangani has its source on Kilimanjaro, the Msangasi in the Handeni mountains. Both flow into the Indian Ocean. Both have numerous small affluents which dry up in the rainy season. There are crocodiles in most rivers, the greatest number in the Pangani. In the dry season the Msangasi has crocodiles only in its lower reaches.

The Pangani carries a great quantity of water to the sea throughout the entire year. In its upper reaches just above the Great Falls

(Mayi Chemka or Margaret Falls) it is about 35 to 60 yards across. The mouth between Pangani and Bweni is 450 to 550 yards broad. The tides may be observed as far as six hours' journey above the mouth.

The Pangani is always an obstacle and can only be crossed by bridges, ferries, or boats. There are permanent ferries (1) between Pangani and Bweni with sailing-boats and dhows. (2) Half an hour below the Great Falls. Three days up-stream. A wire suspension bridge joins the Friedrich Hofmann plantation with the village of Hale two hours above the falls. This can be crossed by men and baggage, while horses and cattle can swim across. People with experience of superintending the crossing live in Hale. The banks between the falls and the mouth of the river are to a great extent marshy and covered with reeds far from the bank. Regions on the Pangani river are poorly provided with canoes, but large boats and dhows are plentiful at Pangani. The river is navigable by dhows to a point close below the falls. Above the falls there are many cliffs, rocks, and rapids. For details of navigation see p. 287.

The upper reaches of the Msangasi dry up into pools in the dry season. In the rainy season the river is very full, and cannot be crossed except by boat.

There are no lakes in this District.

Climate.—The rainy seasons are March to May (the great rains), and November–December (lesser rains). They are not sharply divided from the dry seasons. Showers are frequent throughout the year to the N. of the Pangani. To the S. of it (Uzeguha) they are not infrequent. (See Appendix I.)

Generally speaking, the climate of the District is the same as that of the coast. In the flat stretches near the sea it is very hot; among the hills it is cooler; among the Nguru mountains it is often very cold. Warm clothing is absolutely necessary (*litevkas* for the Askari).

Diseases.—On the coast there is much malaria; helminthiasis is widespread everywhere; intermittent fever and typhoid are seldom found. Chest diseases appear every year in the Akidat Ruguzi and brain diseases in the Akidat Kimbuguru. For tsetse see Chapter XI.

IV.—DISTRICT OF BAGAMOYO

Three regions may be distinguished :—

(1) A flat strip of coast land 6–10 miles wide. It is covered throughout with native settlements. Coco-nut palms, maize, manioc (cassava), sweet potatoes, and cotton are principally

cultivated. On the lower Wami river are cotton plantations belonging to the Leipzig Cotton-Spinning Co. The uncultivated parts are mostly covered with bush. Only S. of Saadani are there bare steppes.

(2) The hilly country of **Udoo**, **Ukwere**, and **Uzeguha** to the W. of the coast strip occupies the largest part of the District. The hills are on an average 500–650 ft. high: the Pongwe Hills (in Uzeguha, S. of the middle course of the Wami) have an altitude of 1,300–1,650 ft. In the stretch of hill country N. of the Wami the ascents and descents are generally easy: on the middle Wami the hills are much broken up by deep ravines with steep sides. Between the Wami and the Kingani lies easy rolling country. The fields are usually cultivated with maize and millet: not much open ground. There are large uncultivated thinly wooded steppes. In the region of the sub-district of Saadani the bush is thicker, and usually cannot be penetrated without bush-cutters.

(3) The **Nguru** mountains, forming the western frontier of the District, run from S. to N.: they rise to 6,500–8,000 ft. Steep ridges are a characteristic feature. There is much virgin forest and many streams with a perennial flow of water. The country is so broken and the vegetation so dense that movement and observation are difficult.

The highest peaks of the Nguru mountains lie between Mabega (6,900 ft.) and Lusingiso (6,725 ft.): they are about 8,000 ft. high. A narrow range runs S. from Lusingiso with peaks about 6,200 ft., and terminates in Mt. Mkobuhe. The country W. of this range was still unexplored in 1911: it was believed to be very broken, wooded, and uninhabited. This mountain country is bounded on the S. by the isolated massif of Msumba, the spurs of which reach as far as the steppe country lying on the Wami river below the point where it enters the District. Mt. Msumba is about the same height as Mt. Mkobuhe. North of the Mabega–Lusingiso line the highest peaks are the Gonja, the Wuga, the Ndeme, and the Mabuga (about 6,500–6,700 ft.). In the range bounded by the Liwale and Mjonga (Mdenongi) rivers, the heights of the peaks descend gradually to 4,600 ft. between Mt. Gonja and Mt. Ngombeive, and then drop steeply nearly 3,000 ft. to the bank of the rivers above mentioned. The height of Mt. Kibogoji, which lies quite isolated on the E. bank of the Boruma, is perhaps 6,500 ft., that of Mt. Wigenge 4,200 ft.

The northern boundary-river, the Mligazi, dries to some isolated pools. Even in the rains it can be crossed without any special measures. Crocodiles are numerous.

The Wami always contains much water. In the dry season it is about 3 ft. deep, 10–15 yds. (or somewhat more) in width. In the dry season it can be crossed only in boats. Crocodiles occur. Of the northern (l. bank) tributaries of the Wami the most important are the Liwale with the Mjonga and the Lukigura. The latter in the dry season loses its water except in certain pools; the streams in the Nguru mountains which form it have always water. The Lukigura and in parts the Mjonga can be crossed in the rains without any special measures.

The Kingani (called Ruvu in its middle and in part of its upper course) always carries much water, and in the District can only be crossed in boats. At its mouth its banks are lined with marshes some miles in width. Its l. bank tributary the Ngerengere (on the SW. boundary of the district) cannot be forded in the rains, but in the dry season it contains water only at isolated spots. The other tributaries are not obstacles in the rains and dry up completely in the dry season. Away from the rivers water is to be found at the villages and settlements, generally in dug water-holes which easily dry up in drought. The water is generally dirty and in some places brackish: for Europeans it is hardly drinkable and often dangerous to health.

Climate.—The great rains last from the end of March to the beginning of June, the lesser are in November: but some rain falls throughout the year (see Appendix I). On the coast strip the climate is very hot and sultry. Marching taxes the strength of Europeans and natives. In the hilly interior it is cooler and in the Nguru mountains often very cold. Warm clothing is desirable there.

Diseases.—Helminthiasis and malaria are widely-spread diseases. Small-pox appeared in 1909, but did not spread. Recurring fever is prevalent in all camps on the caravan-routes and in the native huts. For tsetse see Chapter XI.

V.—DISTRICT OF MOROGORO

Four regions may be distinguished: (1) The mountain regions of Uluguru and Ukami: (2) Khutu: (3) the Mkata plain: (4) the mountain region of Usagara with the Widunda country in the SE., and the Kaguru country in the N.

(1) **Uluguru** includes the Uluguru mountains, which in their eastern part have a considerable rainfall and comparatively few steep slopes, while towards the E. they fall away very steeply and are relatively dry. The central ridge of the range is mostly covered

with virgin forest up to an altitude of about 5,900 ft., but in its southern part is bare in a good many places. The chief elevations are : in the N. Lupanga (about 6,900 ft.), in the W. Pugali (about 6,500 ft.), in the S. Lukwangule (highest peak, about 8,900 ft.), in the SE. Mkambaku (about 7,200 ft.). Lukwangule has a fairly extensive, barren, and uninhabited plateau. The whole range is much broken by ravines, especially in the virgin forest. Military operations are here very difficult. East Uluguru is well watered, the chief river being the Ruvu (called Mbezi in the hills), which receives all the other rivers of Uluguru, including those of West Uluguru. Other considerable rivers rising in East Uluguru are the northern Mwuha, the Fisigo, and the southern Mwuha ; in S. Ulugu, the Mgazi ; in W. Uluguru, the Mgeta, Mlali, Ngerengere, Msinga ; in N. Uluguru, the Morogoro, the Tongeni, the Bigwa, and the Ngolole. Many rivers carry water throughout the year, and in the rains have often a very great volume, so as to be impassable. The whole of Uluguru is well populated up to the edge of the virgin forest.

Ukami borders on North-eastern, Northern, and North-western Uluguru. Its highest mountains are Nguru-ya-Ndege and Mt. Mindu, both with a scanty population only on their eastern slopes. Towards the W. the country changes to gently rolling hills, mainly covered with Myombo forest. Here the population is very numerous, being most thickly settled round Morogoro town. The country is watered by the river system of the Ngerengere, which in the height of the dry season (about October and November) dries up below the Ngerengere railway station. Its tributaries are the Msinga, the Morogoro, the Tongeni, and the Bigwa. With regard to the crossing, what has been said of the rivers of Uluguru generally may be taken as applying to it.

(2) **Khutu** borders on SE. and S. Uluguru. It is mainly gently rolling steppe country ; only S. of Kisaki are some minor elevations (the Mua hills). It is fairly thickly populated, especially in the neighbourhood of Kisaki. In the uncultivated parts open grass-steppes alternate with thin open woods or steppe-bush. The Ruvu and the Mgeta with their very numerous tributaries water the steppe country, where game is abundant.

(3) The **Mkata** plain, W. of Uluguru and NW. of Ukami. Treeless steppe of black peat, with very high grass. The Tendiga swamp lies in the middle. In the rains large tracts of steppe are under water, and others are morasses which can be traversed only with difficulty. With the exception of a small village at the railway station Mkata and of small settlements near the junctions of the

Mukondokwa with the Mkata and of the Mkata with the Wami, the plain is uninhabited. Game is very abundant. The rivers just mentioned always contain water, though the Mkata dries up in the dry season as far as the mouth of its tributary the Myombo.

(4) **Usagara.** A fairly densely populated and moderately thickly wooded mountain-country with heights rising to about 5,900 ft. Easy declivities. The most northerly part, the highland of Kwifia, is thinly populated and difficult of access. The vegetation is mainly bush forest. Of the rivers the Mukondokwa, the Yofu, and the Myombo always carry water: after heavy rainfall they are difficult to cross.

To the SE. Usagara is bordered by the Widunda country, a mountainous region, with fairly steep slopes. It is thickly populated and sparsely wooded. Its highest peak, the Li-Yunge (about 5,900 ft.) has some virgin forest on it, and contains a large cave. Besides the great Ruaha river which forms the S. boundary of Widunda, numerous smaller rivers always carry water.

N. of Usagara lies the Kaguru country, a highland rising to 6,500 ft., fairly densely wooded, and thinly populated; easy declivities. The vegetation is mainly Myombo forest. The largest rivers are the Wami, the Kisangata, and the Tami, which always contain water. In the rains they are often very difficult to cross.

Climate.—The rains in the District fall in the months December–April (see Appendix I). The temperature in the mountains is everywhere very cool, especially in the virgin forest zone. Warm clothing and blankets are absolutely necessary at night.

Diseases.—Typhoid on the railway line, recurrent fever in the camping places on the caravan roads, especially on the Kilosa–Iringa route. Helminthiasis is widely spread. Malaria is found everywhere except in the mountains, which at altitudes above 3,300 ft. are free from mosquitoes. For tsetse see Chapter XI.

VI.—DISTRICT OF DAR-ES-SALAAM

The District is formed by a plain which is traversed from NE. to SW. by a narrow chain of heights (800–1,150 ft.) on the line Pugu–Maneromango–Wikumbula. Predominant on the plain are steppe and grassland with more or less thick bush, scanty foliaceous vegetation, and sandy soil. The hills are almost entirely wooded, bush and thin open woodland alternating.

West of Wikumbulla is a steppe, a day's march across, which is poorly supplied with water; there is a similar steppe S. of Wikumbulla to the Rufiji river, but here one can obtain water.

Of the rivers the most important are the Ruvu (Kingani), the Mpiyi, the Mbezi, the Mazimbazi, the Msinga, and the Luhute, all flowing into the Indian Ocean. In the rains they carry abundant water, and are obstacles as far as their upper courses : their middle and lower courses are passable only in boats. The Ruvu and the Luhute always carry water even in the dry season ; the other rivers only at their mouths. W. and N. of Mkamba there is an extensive marshy region in the rainy season, which is impassable. In the dry season water is difficult to obtain.

Climate.—The lesser rains fall in the months December, January, and up to the middle of February. It was reported in 1911 that they had been irregular in previous years. The great rains are in April and May. The rainfall on the coast is heavier than in the interior. The climate is of the type ordinarily found on the coast of the Protectorate.

Diseases.—Malaria in the whole District ; recurrent fever on all caravan roads. Helminthiasis and bilharziosis widely spread on the coast. Framboesia (Yaws) and elephantiasis in the whole District. Venereal diseases in the town of Dar-es-Salaam. For tsetse, &c., see Chapter XI.

VII.—DISTRICT OF RUFJI (formerly called Mohoro)

Three regions may be distinguished :—(1) the Rufji Delta, (2) the Rufji Plain, (3) the highlands of Matumbi, Magongo, and the southern extensions of the Uluguru range.

(1) The **Rufji Delta** is about 30 miles broad and 13 miles long, with a much-ramified river-system. In front of it lies Mafia island (belonging to the District of Kilwa) separated from the mainland by the Mafia channel. The more northerly arms of the delta have an average breadth of 550 yds. The Simba-Uranga arm is navigable for large steamers as far as Zalale (coasting steamers of the Deutsch Ost-Afrika Line, 2,800 tons). Almost all the arms are navigable for revenue cutters and dhows : they are tidal for about 12–13 miles inland. Salt water as far as the point where the Bumba branches off. (On the navigation of the Rufji see Chapter IX.)

The delta islands are covered with mangroves, and on their inner side they have high sand deposits faced with palm logs and fascines, and have room for a population of about 4,000 souls. Besides the habitable land, there are salt lagoons, with uninterrupted expanses which may be 300–350 yds. in breadth and some miles in length. Communication is possible by water only. The delta arms are in parts 40 ft. deep, and cannot be forded even at the ebb. The

mangrove-covered parts of the islands are marshy and thickly overgrown, and infested by immense swarms of mosquitoes.

(2) The **Rufji Plain** borders immediately on the W. of the delta region. The plain is a wide grass steppe which runs along both banks of the river, with an average breadth at first of about three miles. It is characterized by backwaters and by depressions which contain water in flood time. In the neighbourhood of Utete (which since 1911 has become the administrative head-quarters of the District) on the southern bank, and from Kipo to Mroka on the northern bank, as well as on both sides of the river in the region of Kibambawe, the spurs of hill-ranges come right up to the river. On the banks there is high grass in which occur numerous clearings occupied by native settlements. Between the Kichi and Magongo hills in the E., and the Kipalala mountains and the Mahenge plateau on the W., the Rufji plain broadens out to N. and S., and becomes a steppe covered with a fairly scattered growth of trees and thickets: it is gently undulating, uninhabited, and scantily supplied with water. The Rufji in its middle course has an average breadth of 330 yds. The water is lowest in November: but even then the river is unfordable. Large pools and holes in the bed: crocodiles. A river steamer has in recent years navigated the river as far as the Pangani Rapids during the rains, and as far as Sombe in the dry season. At many places the Rufji forms stretches of backwater which during the rains are in parts only traversable with the help of boats. They contain crocodiles. The r. bank tributary Lungonya (with the Mtarula), and the l. bank tributaries Msangasi and Kihimbwa carry water only in the rainy season, but after rainfall rise so high as to make it impossible to ford them, and one has to wait till the flood is drained away and the river sinks. When possible always cross before camping. The Luhohi carries water even in the dry season, but is then passable. In the rainy season it resembles the Msangasi and the Kihimbwa.

The lakes (Nserekera, Mtemere, Sumbi, Mtungi, Mbunju) are not fordable. The banks are open, and surrounded by light scrub or open wood. The water is brackish.

(3) The **Matumbi** highlands contain narrow valleys and ravines with steep rocky sides. Rocky massifs falling steeply towards the coast. The Kichi hills in the NW. have less steep sides. Round hills are the usual formation. Valleys and heights covered with thick virgin bush, overgrown with creepers. Towards the W., where the highlands pass into lower eminences, and in the direction of the Rufji, the place of the impenetrable bush is taken by open forest

and scattered trees. In the valleys of the Matumbi country proper, water is to be found the whole year: Kichi on the other hand is throughout scantily supplied with water. Only a few localities have perennial water, as for instance the valley of the Yelei, the depression between Kikoko and Kitunda, the upper course of the Mtawi (the boundary between the Kichi and the Matumbi hills), and the valley of the Ngarambi and the Lungonya at different places. Water for the villages situated on heights often has to be fetched from very considerable distances. Rivers and streams dry up as they reach the plain. The mountain-rivers are not obstacles at any time of year.

The northern highlands, called **Magongo**, have their greatest heights and steepest slopes in a stretch roughly parallel to the coast at about 6–15 miles distant. Towards the W. the country sinks and passes into rolling upland, which is almost flat in the neighbourhood of the foot of the Kisangire highlands which belong to the Dar-es-Salaam District. Moreover towards the northern boundary of the District (now apparently the River Luhute, also called Uwute or Ufute) the heights become rounded hills, the valleys of which are filled with white sandy soil. In the neighbourhood of the coast zone the hillsides are steep with deep valleys in places. The soil is weathered red sandstone. The whole region is covered with thick virgin bush, which towards the W. becomes more open, and then passes into a steppe with a light growth of trees and occasional bush thickets or open grassy flat spaces. The mountain country is passable only on the roads. Water is perennial only in the valleys where there are waterholes. The northern boundary river, the Luhute, always contains water. With regard to the possibility of crossing it, the remarks made above on the tributaries of the Rufiji may be taken as applying to it. The western end of the hilly country is also very poor in water. Here the water soon dries in a light sandy soil, but water can always be obtained in 4–5 hours. The Luhohi contains in its middle course sulphurous and undrinkable water.

The southern extensions of the Uluguru range (Fuga, about 1,800 ft.; Hatambulo, about 2,300 ft.; the Kipalala hills, about 1,500 ft.) run near Kibambawe close down to the Rufiji. Here and at the Pangani rapids they are difficult to climb. They are composed of huge masses of sandstone, the eastern slope of which is impeded by large sandstone rocks. The vegetation consists of a light tree-growth, the underwood of which is burnt away every year. These woods never impede progress.

Climate.—The rains last from December to May, the other months

being almost rainless (see Appendix I). The climate on the coast and on the Rufiji plain is very hot and sultry. In the hills warm clothing is necessary at night during the cold weather (June–September) for native troops and porters.

Diseases.—Malaria is endemic throughout the District. Helminthiasis is everywhere widespread. Leprosy occurs sporadically. Recurrent fever on all caravan roads. For tsetse and coast fever see Chapter XI.

VIII.—DISTRICT OF KILWA

The river Matandu, flowing from E. to W., divides this District into two regions :—

(1) The region N. of the Matandu bounded in the E. by the Indian Ocean, in the N. by the District of Mohoro, in the W. by the Marangandu, the Luwegu, and the Rufiji.

In the neighbourhood of the coast it contains the Matumbi mountains (sub-district Kibata). These consist of steep hills covered with thick evergreen bush (in places with rubber-bush), which gives no field of vision. They rise to a height of 1,600 to 2,000 feet, and offer considerable difficulties to troops leaving the roads. They are relatively rich in water.

The generally dry bed of the Lungonya river passes from S. to N. along the western borders of the Matumbi mountains into the District of Mohoro, where it apparently flows into the Rufiji, although one authority declares that it flows into the Utungi lake to the S. of the Rufiji. It passes through a broad plain covered with grass and in many places with thick bush, which offers no field of vision. It only has water at times in the rainy season, but the plain on either side of it is then often 2 feet deep in water.

Farther still to the W. is the Akidat Madaba, which stretches to the Luwegu and the Rufiji. It is hilly country covered with bush and in places with high wood, and is fairly thickly populated.

The Luwegu, like the Rufiji, always has running water above ground, and both are frequently impassable in the rainy season. There are only a few crocodiles in the Luwegu. Perennial water is found (though at times only under the sand) in the Marangandu and its tributary the Nyenye (with its affluent the Dapate). It is also found in the Matandu from about the region of the Kiulimira mere (crocodiles) downwards. The broad mouth of the Matandu six miles N. of Kilwa (with banks almost impassable because of mud and mangroves) is affected by the tide for several hours' journey up-stream (crocodiles).

The whole middle part of this half of the District is very poor in water (Route Yingo-Nambaniye-Madaba).

(2) The region S. of the Matandu is bounded in the E. by the Indian Ocean, in the N. by the Matandu, in the W. by the Marangandu, in the S. by the Mbemkuru (Umbemkuru).

The coast of the Kisiwani Bay cuts into the land in numerous inlets whose shores are covered with mud and mangroves. S. of Manara island the coast is rocky; the Kiswere Bay in the south is suited for landings.

The following ridges of hills run S. parallel to the coast: (1) the Singino mountains S. of Kilwa Kivinje; (2) in the neighbourhood of the Lingandra (? Ngaura) river; (3) the Kiturika mountains on both sides of the Mavuji river falling away sharply to the E.; (4) further numerous high ridges with different names (up to 1,600 ft.) reaching to the Mbemkuru river. Hills and valleys are covered with thick bush, especially rubber, in which (in spite of narrow paths) one can usually advance only by means of bush-knives and side-weapons.

West of these hills high plateaus (with some characteristic hills) alternate with hilly land covered by bush and high grass. In the region of the sub-district Liwale (Luale) (in the W. of this half of the District) there is also high wood. N. of this between Liwale and Madaba in Donde land there is mostly thick rubber-bush.

The Mavuji river with its western tributary the Muira (? Nyawira) flows through the middle of this southern region of the District from W. to E. It has always clear water, although often (in its upper reaches) only under the sand. So also with the Lingandra (? Ngaura) river, which flows into the innermost corner of Kisiwani bay. It is always passable, and there are crocodiles only in the reaches affected by the tide.

The Mbemkuru river affected by the tide at its mouth (crocodiles), always has water in its lower reaches, and may present serious obstacles to crossing. In its upper reaches it always has water under the sand, as has also its l. bank tributary the Ruhuhu (Luhuhu), which flows in about 120 miles (in a straight line) above its mouth. Near the river courses the land offers a fair field of vision, and in places takes on the character of steppe. The region between the Matandu and the Mavuji and the region between the Mavuji and the Mbemkuru are poor in water. Tributaries of these streams may present serious obstacles in the rainy season.

Climate.—The rainy season begins, on the average, at the end of November and continues into the middle of January. There is a second rainy season from the middle of February to April, and

there are also smaller rains from May to August. The times, however, are subject to a considerable amount of variation. There are especially violent rainstorms in the Matumbi mountains and in the river valleys of the Luwegu, Matandu, Mavuji, and Mbemkuru (see Appendix I).

In the Matumbi mountains especially, but also in the hills to the S. of Kilwa, in Madaba, and in Liwale, it is perceptibly cold in the night and morning from May to the end of September. Hence warm clothing is very necessary (*litevka* cloth, mantle or wrap, warm underclothing). The climate on the coast (Kilwa Kivinje, Kilwa Kisiwani, Kilwa Kiswere) is very hot and moist. It is cooler in the interior.

Diseases.—Europeans must take account of the following diseases : on the coast and in the river valleys (in the neighbourhood of inhabited places), malaria; on the caravan routes, recurrent fever and dysentery (the Kiperele country between Nakihu and Liwale, and also the Matumbi mountains). Typhoid and sleeping sickness do not occur. For tsetse and coast fever see Chapter XI.

IX. DISTRICT OF LINDI

The District is in its eastern half high plateau falling gradually to the coast; in its western half plain with mountain ranges and numerous isolated mountains. Twelve regions may be distinguished :

- (1) Coast strip : Mchinga—Lindi—Zudi—Mikindani—Kyonga.
 - (2) Mwera plateau with the highlands of Rondo, Malimu, Mputwa, Chiliamanda, Noto, Likonde—Kitale, Likonde—Kitutu.
 - (3) Makonde highland.
 - (4) Ilulu.
 - (5) Chiwata.
 - (6) Masasi.
 - (7) Newala.
 - (8) Majeje.
 - (9) Mbemkuru—Lumesule—Mtetesi.
 - (10) Muhuwezi.
 - (11) Tunduru.
 - (12) Sasawara with the Rovuma plain.
- (1) **Coast** strip, Mchinga—Lindi—Zudi—Mikindani—Kyonga. This is flat with small elevations which come near the coast in the N. but keep far from it in the S. Kitulo mountain near Lindi (to the S.). Mangroves, coco-nut palm, baobab, and rich vegetation near the coast.

The Mbemkuru has its mouth in Msungu bay ; the Namgaru in Mchinga bay ; the Lukuledi in Lindi bay ; the Liteo-Mambi (Mambi) in Zudi bay ; the Rovuma and its delta in Rovuma bay and Kyonga bay. The Lukuledi has many broad saline creeks. The Lukuledi is about 2,000 yds. broad at its mouth, the Rovuma about $1\frac{1}{4}$ miles. Both have water at all seasons of the year. The delta of the Rovuma is widely ramifying. The Mbemkuru and Namgaru are dry at times, the Liteo-Mambi has water only in the rainy season. The Likongo, a small river flowing into the Indian Ocean two hours S. of Mchinga bay, has water at all seasons of the year.

Lindi and Mikindani are harbours for steamers, the other bays for dhows. The Rovuma and Lukuledi can only be crossed by ferries at their mouths. There are crocodiles in the Rovuma ; very few in the creeks of the Lukuledi ; a considerable number in the creek of Nguru-Mahamba to the W. of Lindi.

(2) **Mwera** plateau with the highlands of Rondo, Malimu, Mputwa, Chilamanda, Noto, Likonde-Kitale, Likonde-Kitutu.

High plateau up to nearly 3,000 ft. The highest elevation is near Mchinyiri. The valleys are deep-cut and there are precipices. Virgin forest and high steppe-forest ; in the valleys impenetrable bush. Noto and Likonde are also completely overgrown.

Perennial water-courses : the Lukuledi from the mouth to Mtama about 25 miles inland ; the Nyangao and Mahiwa, tributaries of the Lukuledi ; and the Mirola (Milola) which flows into the Lutamba lake.

The Mkoe lake is a swamp in the dry season ; lakes Naitiwi, Tandangongoro, Nampawara, Lutamba have always drinkable water.

The rivers are always passable both in the dry and the rainy season, but may offer obstacles for a few hours after heavy rain. There are no crocodiles.

(3) **Makonde** highland.

This is a plateau of 800 to 1,600 ft. which falls steeply to the Rovuma and Lukuledi but sinks gradually to the coast. The whole plateau is overgrown with impenetrable bush known by the name of Makonde bush.

The Lukuledi as above ; the Liteo-Mambi and the smaller rivers with water only in the rainy season. The boundary river Rovuma has always water. It is very swift in the rainy season, and forms an obstacle because of the many rapids and rocks. In the dry season it can be crossed at fords and in boats. The other rivers are passable. There are numerous crocodiles in the Rovuma. The Makonde highland is very poor in water ; it is necessary to cross

absolutely waterless stretches of as much as 17 hours' journey. Kitere lake (in the NE.) is a swamp in the dry season.

Rovuma lakes—Lake Chidya, Lake Urongo and others smaller—always have good water.

(4) **Iulu**. W. of the Mwera plateau. Very undulating country with isolated mountains. Iulu 800 feet above the level of the plateau, Bangala, Malenga, Namyegu and Nangalimbo (rounded hills of gneiss and granite). There is high steppe forest alternating with thick bush. There is much bamboo, high grass, continually changing vegetation. The summits of the mountains are bare in places. Thinly inhabited.

This region is very poor in water. The larger streams are Kipindimbi, Nakihihi, Mnere and Ngandi. Water only in the rainy season. Rivers always passable. No crocodiles.

(5) **Chiwata**. SE. of Iulu (NW. of Makonde highland). Mountain country: Chiwata itself about 3,000 ft. Chiporombe mountain NW. of Mwiti mountain; many rugged parts, sharp rise from Masasi.

High foliaceous wood. Thickly populated.

Liloya and Chiwata always have water but are always passable. Bridge over the Chiwata.

(6) **Masasi**. SW. of Chiwata. A plain with grotesque isolated mountains: Mtandi over 3,000 ft., Masasi, Mkwera, Mkonga; thickly peopled. So far as it is not cultivated it is predominantly a savanna (*Baumgrassteppe*); more rarely grass steppe and bush-grass steppe; the mountains are thinly wooded and in places bare. Near Masasi itself there are a few coco-nut palms.

No large streams; many small streams and brooks; always passable and always containing water.

(7) **Newala**. SE. of Masasi. Mountain country like Chiwata but more broken, sinking gradually to the Rovuma. Ituvi and Nahikimire mountains S. of Newala. In the western part light foliaceous wood predominates; in the eastern thick bush in the river valleys, foliaceous wood on the hills.

Rivers: Mwiti with its tributary the Mayembe with water only in the rainy season. Further many springs and sources; water remains there in rocky basins. The Rovuma as before.

Lichehe lake (through which the Mwiti river flows) has always good water.

(8) **Majeje** (Madjedje), W. of Newala. Plain with many isolated mountains (grotesque rounded summits of gneiss) conspicuous from a long distance. Mountains: Majeje (3,000 ft.), Goliro, Mkoma, Kitwangule, and Lisenga. So far as it is not cultivated it is savanna

and bush country with stretches of light foliaceous woods. Light woods on the banks of the rivers; continually varying vegetation. Summits of mountains often bare.

The river Rovuma is as above. Its tributaries are the Muhuwezi, the Mitesa, the Lumesule, the Lukwamba, the Rukwika. The Muhuwezi has water always, the others only in the rainy season. Water always to be found by digging.

The Muhuwezi is an obstacle in the rainy season. At this period too crocodiles wander some miles up stream. In the dry season free from crocodiles and passable. The other rivers are passable, but have occasional crocodiles at their mouths in the rainy season.

(9) **Mbemkuru-Lumesule-Mtetsi.**—Mostly flat with some isolated mountains. Undulating near the former settlement of Mesule. Lukundi and Ligwira mountains in the source region of the Mbemkuru. Kongowere E. of the Lumesule, Mbaha between the Mtetsi and the Lumesule, Mpalapala W. of the Mtetsi are granite rocks rising steeply out of the plain, bare, grotesque, visible from great distances. Broad flat park land (or savanna) on the upper Mbemkuru, near Mesule thick foliaceous wood and bush; flat plain between Lumesule and Mtetsi with alternate grass steppe and savanna (*Baumgrassteppe*). Bamboos everywhere. Varied vegetation.

Rich in water: the northern plain between Lumesule and Mtetsi dry at all periods of the year, uninhabited. The upper Mbemkuru and the upper Lumesule are thickly populated.

Rivers: Mbemkuru, Lumesule, Mtetsi with water holes and water basins even in the dry season. Lumesule and Mtetsi rocky. Mbemkuru and Lumesule have a much ramified source region rich in water. Kilimandembo and Mitendaki marshes on the l. bank of the Mbemkuru and also the source region of the Lumesule are flooded and impassable in the rainy season. Rivers in the rainy season have a rapid current and are only passable at fords.

(10) **Muhuwezi** (Muhezi). Mountainous country. Heights not over 2,000 ft. Broad, open valleys, varying in shape: small plateaus, precipices, gradual ascents. There are often precipices of red sandstone. On the heights are open parklike foliaceous woods, and stretches of Myombo forest, in the valleys steppes of tall grass; the river valleys are very wide; high grass and reeds, very difficult to cross. Quite uninhabited. There is a sparse population only along the Lukundi and Mtungwe road.

This region is the richest in water in the District. In the rainy season the valleys are flooded and difficult to cross. Many ponds and pools. Water is bad and mostly marshy. Yawanga and

Mombola ponds are on the Lukundi road, Tanda pond on the Mtungwe road.

Rivers : Muhuwezi, always water. Affluents on r. bank : Nyungu, holds water in basins ; Nampungu, always water ; Mlingote, holds some water. On l. bank : Misonsho, Mikehe, Mihihiwa, Mkundi, water only in the rainy season ; in the dry season to be had by digging. Muhuwezi cannot be crossed during the heavy rains. The other rivers may be crossed. No crocodiles anywhere.

(11) **Tunduru**. Mountain land, lying in the mountain chain of Masasi-Songea ; many small plateaus ; in parts, steep ascent and descent. Watershed : falling gradually towards the Rovuma. Thickly populated in stretches, particularly on the Mlingote ; where the land is uncultivated there are tall foliaceous woods open and with underwood.

Mlingote, Nangazo, Masonyo are small rivers flowing into the Muhuwezi : Msaushi and Msiniwe into the Rovuma. In the dry season water can be found in natural reservoirs. Msiniwe keeps its water long, but not during the whole year. The rivers can generally be crossed in the rainy season.

(12) **Sasawara**, with plain of Rovuma. Plain, partly undulating, with slight rises in the western part ; Kikomo, Palikwitwa, Mko-rimbo, Mwuetuno, Likwero, and Kisungule.

Steppe forest predominates. There are also grass steppes. On the Rovuma plain there are park-like woods and bamboo as well.

Rovuma, with numerous brooks and rivulets, of the same character as described before. Sasawara, Ligologo, Luwingo or Mbesa, Lukumbele ; water only in the rainy season. Crocodiles in the Rovuma. During the rainy season an occasional one may be found in the mouths of the larger rivers.

Climate.—The lesser rainy season ; from beginning of December to beginning of February. Greater rainy season ; from beginning of April to beginning of May. On the coast greater precipitation than in the interior. On the coast it is cool from July to September in the morning and evening : otherwise, hot. In the interior, on the high plateaus of the Mwera, Mchinyiri, Makonde, Chiwata, Newala and Luwira, it is noticeably cold in the morning and evening at all times of year. Here warm clothes are necessary.

Diseases.—In the town of Lindi malaria is endemic ; on the caravan roads particularly near Mtwā recurrent fever is found. Helminthiasis and bilharziasis in the whole District, particularly in the neighbourhood of the plantations.

Latterly dysentery has appeared several times. For tsetse see Chapter XI:

X.—DISTRICT OF SONGEA (not including the sub-district of Wiedhafen, for which see under District XI, Langenburg)

The District is divided into (1) the hill country of Ungoni, (2) the mountain districts of Ubena, Upangwa, Matengo, (3) the bush-covered hilly country of Matumbi.

(1) **Ungoni** is hilly country which takes on a mountainous character at its highest parts. The Matogoro mountains are close to Songea station. The Rovuma rises in them. The Lihumbara mountains lie to the south-west. The Lupagaro mountains lie to the NW. of Songea on the Luhiri R. with the characteristic cone shapes of the Gorowora. On the W. frontier of the District the Namchweia Mt. lies on the road to Wiedhafen.

The whole country is covered with 'dry forest': no field of view. The high grass can first be burnt at the end of September. Only on the Portuguese frontier is it possible to burn the grass in the middle of August. Large isolated open patches of low-lying ground, mostly marshy, occur in South Ungoni, round the Lihumbara Mts.

The country is very rich in water. Flowing water is always to be found in the valleys. The Rovuma is not fordable from the point where it turns to the S., and the Ruhuhu is not fordable in its lower course. The other rivers are passable in most places or if necessary at fords in the dry season. There are crocodiles in all the large rivers.

(2) **Ubena, Upangwa, Matengo** are mountain countries with very considerable peaks. Pasture-lands offer a good field of vision. Isolated patches of unpassable tropical virgin forest are found on the heights. The most considerable virgin forest is on the summit of the Mdando mountain near the Lupali. Water as in Ungoni.

(3) **Matumbi.** Hill-country covered with bush and big bamboo thickets impenetrable to the eye. It is bounded on the N. by the Ruhuje, on the E. by the Pitu. The rivers are almost always fordable, and sufficient water is to be found everywhere in the dry season. The rainy season lasts from about December to May. After that completely dry.

Climate and Diseases.—The highlands have a very cool climate all through the year, and Ungoni from May to September. The nights in the river valleys are specially cold. Warm clothes are necessary. For the Askari *litevka* and two rugs. Recurrent fever occurs in the camps on the caravan routes. There are many lepers in the whole District.

XI. DISTRICT OF LANGENBURG (including the sub-district of Wiedhafen now attached to District X, Songea)

(1) Southern region along Lake **Nyasa** to the Portuguese frontier. Along the E. coast of Lake Nyasa run the Livingstone Mts. (rising to 8,200 ft.), which between Alt-Langenbourg and Wiedhafen fall steeply right on to the lake. In the whole of this stretch of coast there are only one or two places at which vessels can put in (e. g. the Bay of Lupingo). A few inhabitants (Wakisi) live among the rocks, which are mostly bare or covered with low bush, and yield them a miserable livelihood. At and S. of Wiedhafen a strip of flat coast-land, which in places is $2\frac{1}{2}$ –5 miles broad, lies between the mountains and the lake, and affords a gradual ascent to the mountain-country. In this part of the coast are several good harbours. Numerous streams water this coast-land, which is covered with mohogo-fields, grass, and thin forest. The largest river is the Ruhuhu which flows into Nyasa about 5 miles S. of Wiedhafen. At the mouth it is 230–330 yds. broad, but generally very shallow. In the rains it is deeper and very rapid. In 1911 a large ferry-boat was available. At all times there are very numerous crocodiles in the river and on the shore of the lake. The coast is everywhere sandy or rocky, and either quite bare, or (at the mouths of streams) covered with reeds and sedge. SSE. of Wiedhafen a mountainous hinterland rises to about 4,900–6,500 ft. It is very sparsely populated, bare, and strewn with great masses of rock. Even in the dry season it is fairly well provided with water. Where there is vegetation it generally takes the form of miserable underwood and shrublike trees. In the northern part of the range are slopes covered with grass and underwood, while in the ravines and on the rounded summits are patches of virgin forest and bamboo-wood. Here the land rises to 8,200 ft.

(2) The central part of the District comprising the mountains or uplands of Ukinga, Bwanyi (Elton Plateau), the Rungwe massif, Uzafua, Poroto, Malila, Undali, Kondeland.

In this central part **Kondeland** is a peculiar and isolated region. It forms a semicircle open towards Lake Nyasa. On the E. and NE. the semicircle is bounded by Ukinga (the northern part of the Livingstone range) and the Bwanyi upland, in the N. by the Rungwe massif, and further W. by the Uzafua, Malila, and Undali uplands. The uplands have an average height of 5,900–6,500 ft. above sea-level; the Rungwe volcano rises to 9,850 ft. and is overgrown on its lower slopes with thick virgin forest, and farther up with bamboo.

Kondeland falls into two divisions, a plain and an upland. The latter is a hilly plateau, about 3,950–4,250 ft. above sea-level, traversed by innumerable ravines and valleys in which there is always flowing water even in the dry season. In the eastern part of the upland rises the isolated mountain of Kieyo (about 6,500 ft.), an extinct volcano, covered with virgin forest at its summit. Elsewhere the upland is covered with ferns, grass, and low undergrowth. Here and there trees or tree-clumps (in places fairly thick) relieve the monotony of the landscape. In the valleys the land is settled and cultivated.

Between the upland and the plain lies a zone of open wood about 7–8 miles broad, the so-called Masukulu Forest, which here and there pushes out arms into the steppe country of the plain.

The plain, which is only slightly higher than the level of Nyasa, is absolutely flat. It is an extraordinarily fruitful alluvial plain, extending mainly in great expanses of steppe with high grass, but open forest and liana-thickets occur from time to time. The liana-growth is especially common at the foot of the Livingstone mountains. The country is thickly populated, especially along the rivers, and in the villages are giant groves of banana-trees (so also almost everywhere in the upland). In the rains great areas of the plain are flooded and hardly passable. Kondeland is watered by numerous brooks and small rivers, and also by the Songwe (forming the boundary with Nyasaland). Even in the dry season the Songwe cannot be passed without the help of boats, which are everywhere numerous.

Almost all the other water which the country receives comes from the Rungwe mountain mass. All river-beds contain water throughout the year. Streams of some size are :—(i) the Kivira in the West with numerous fords, some of which can be crossed in the rains : boats are to be found only in its lower course : crocodiles are numerous. (ii) The Mbaka ; in the rainy season the passage of this river is either impossible or very difficult elsewhere than on the great made roads, which are carried over by bridges. Ferries are more numerous than on the Kivira : crocodiles. (iii) The Lufirio, which has on the whole the same characteristics as the Kivira. Tributaries of the Lufirio are the Matezi, the Kasiabona, both flowing down from Mt. Rungwe, and the very rapid and dangerous Lumakaria, which rises in the Ukinga upland. The Lumakaria has no bridges : it is difficult to cross even in the dry season, especially for mounted men, and is impassable in the rains. However, one can avoid it by-taking a circuitous route, and it can also be quickly bridged as the necessary material is at hand in abundance. (iv) The Mbazi,

a broad and deep steppe-river, lying in the plain between the Kivira and the Mbaka, and probably at one time an arm or mouth of one of these two rivers. In the rainy season it cannot be crossed without boats, which are necessary even in the dry season at the point where it flows into the Nyasa : crocodiles.

The neighbouring uplands of **Ukinga**, **Bwanyi** (Elton Plateau), **Uzafua**, **Poroto**, **Malila**, and **Undali** all more or less resemble each other. They are plateaus traversed by numerous ravines of varying depth, generally treeless, and covered with low grass, ferns, heather, brambles, and other bushes : in parts containing open meadows which offer excellent pasture : while here and there are strips of virgin forest and bamboo. Bwanyi and Udali are the most scantily wooded. Besides Mt. Rungwe (9,850 ft.) there is (in Poroto) the remarkable Mt. Ngozi (7,900 ft.) in the crater of which is Lake Wentzel-Hechmann. Mt. Ngozi is covered with virgin forest and bamboo. The uplands are fruitful and abundantly supplied with water. The following are rivers of some size :—(in Ukinga) the Rumbira, which flows into Lake Nyasa near Old Langenburg, and the Lumakaria (both in the rainy season very rapid and passable only in boats) ; (in the Uzafua-Poroto country) the upper course of the Kivira, which at many places can be crossed even in the rainy season on foot ; (in Undali) the Kiya, to which the same description applies. Crocodiles reported not to be found.

The numerous smaller rivers are all very rapid and in the rains sometimes bring down immense volumes of water, and therefore may be difficult and dangerous to cross, especially as they generally have steep banks. Though they are bridged in a fashion at many points, the water carries away the wooden and bamboo bridges almost every year.

To the NE. below the plateau of Uzafua lies the narrow strip of the Usangu steppe which belongs to Langenburg. It is watered by streams from Uzafua. In the rainy season numerous large swamps are formed in the country, and then even the small rivers are difficult to cross.

To the NW. the land descends to Lower Uzafua (about 3,300 ft. above sea-level). This country is a gently undulating, bare, and stony grass steppe : yet even here water is found throughout the year. The double-peaked Bega mountain, nearly 9,000 ft. high, which can be seen even from Langenburg, is noteworthy. Along the Songwe, which flows into Lake Rukwa, and whose tributaries, the Sira and the Lupa, have always water in some places in the dry season, the country sinks gradually to Lake Rukwa as flat thornbush steppe.

Salt steppes quite bare or covered with scanty low grass are to be found for a breadth of several miles round the Rukwa lake to the S. and W. On the E. the mountains come directly down to the lake. The lake water is brackish, but at a distance from the river mouths it is still drinkable.

(3) To the S. the **Rukwa** steppe rises gradually; undulating, stony country alternating with thin wood, thorn bush, and flat steppes. Isolated rocky mountains and hills, covered with bush and thin wood, are gradually introduced, and so the country rises to the plateau of Unika. This Southern Rukwa District has very little water in the dry season; there are only a few river beds in which water can be found by digging, and the water is mostly bad.

Similar conditions exist in the Western Rukwa steppe, which stretches to the Tanganyika plateau and towards the S., encircling the Unika plateau, and gradually passing over into the Uniamanga country.

The Western Rukwa plateau is watered by the Saisi (or Momba), which comes down from the Tanganyika plateau and always has water. The same can be said of the Mkana with the Kalungu (Karungu) which flows through Uniamanga to the Saisi from the S. The country is the same in the districts of these three rivers: flat land with thorns, thorn bush, steppe flats (with single doum-palms) or free, open valley hollows. Only the Songwe is difficult to cross in the rainy season. The Mkana and Kalungu are bridged on the Tanganyika-Nyasa road.

Unika. Undulating plateaus of an average 4,500 ft. height, with numerous isolated mountains between which stretch broad steppes. In the southern mountainous parts are extensive foliaceous woods interspersed with clearings. The district is only moderately well watered, but there are no completely waterless stretches in the dry season. In some places the water-courses are deep-cut and are bordered in the wet season with broad marshes, so that they are difficult to cross. There are no bigger rivers.

Urambia, which joins on towards the S. and stretches to Nyasa-Songwe, shows more or less the same conditions. In it is the Yleji or Jlädji (Lireche) Mt., an extinct volcano with a virgin forest in the crater.

Tanganyika plateau. Flat, high plateau, with isolated rocky mountain-ridges, for the most part grass or thorn steppes with a few Myombo woods; bare, sterile, and lacking water. Towards Bismarckburg the boundary river is the Saisi, which always has water, and can be crossed even in the rainy season by the countless fords which are made by the broad flat rocks. Farther on is the Msupizi,

which flows through a broad steppe and changes this into a marsh in the rainy season. The caravan road goes straight through this marsh, and the river is there crossed by a wooden bridge.

The low land of the **Nyasa-Songwe** (through which runs a stretch of the Igamba-Tunduma road, which is only moderately well kept up) varies in breadth from a few yards to a few miles, and is partly sandy, partly stony, and in some cases covered with bush. In the rainy season it can scarcely be passed owing to many streams which come down from Undali and Urambia.

Climate.—On the Nyasa coast the greater and lesser rainy seasons come in the months November–May.

In Kondeland it rains heavily with little intermission from the end of November right into July, and there is scarcely a month entirely without rain. Much mist. In the highlands also it rains from the end of November to about the beginning of May, and often there is mist for weeks.

In Unika, on the Rukwa lake, and on the Tanganyika plateau the lesser and the greater rainy seasons come together from December to the beginning of May (see Appendix I).

On Nyasa and the Rukwa lake a hot, damp, tropical climate prevails. On the highlands surrounding Rungwe, viz. Ukinga, Uzafua, Poroto, and Malila, and also on the whole high plateau of the Livingstone range, the nights, particularly near the rivers, are so cold, even in the warm season, that the thermometer often sinks to 41° F. Days and weeks of mist; heavy night dews (warm clothing, rugs, &c., necessary; tents also for bearers; heating in the dwellings). In Unika, also, and on the Tanganyika plateau it is decidedly cool at nights in the cold weather.

Diseases.—Recurrent fever is very frequent in parts of Kondeland, in the whole Rukwa basin, in Lower Uzafua, Usangu, and Mwaya, on the caravan road in Unika, and on the Tanganyika plateau. Malaria is endemic up to about 5,000 ft. in the whole District; the highlands, Ukinga, Bwanyi, Uzafua, and Malila, are free from it.

Leprosy in the whole District; particularly widespread in Kondeland.

Dysentery is widespread in Kondeland and Lower Uzafua.

Helminthiasis is found on the Mkana-Kalungu, and has lately crept into Wiedhafen and the lower parts of Kondeland. For tsetse and coast-fever see Chapter XI.

XII, XIII.—DISTRICTS OF BISMARCKBURG AND UJIJI

These two Districts may be conveniently described together. They fall into two regions—(1) the coast region, (2) the interior.

(1) *The coast region.*

Between the Tanganyika lake and the western edge of the Central African plateau a tract of land runs along the lake, in some places only a few yards, in other places many miles broad. As far as these districts are concerned it ends in the N. at Makombe, in the S. at the English frontier where the river Kalambo runs into the lake. This country is fruitful, rising gently towards the E., watered by many streams. It is thickly settled, and covered with banana groves and many fields.

(2) *The interior.*

(a) **Uha.** Undulating, treeless, high plateau. It falls steeply towards the lake in broken ridges of mountains. Towards the N. and the E. it becomes more level, gradually changing into bush-covered steppes or marshy river valleys. The rounded mountain tops are mostly bare, the valleys cultivated.

Everywhere there are clear rivulets and brooks which never dry up. The Mlagarasi in its upper course runs through Uha in a semicircle. It is about 80 ft. broad and in the dry season can only be crossed at a few fords. It is probably navigable for long distances.

(b) **Uwinza.** Mountainous, cut by many deep valleys. There are steep precipices, with granite blocks curiously piled up one on another. The mountains are covered with Myombo wood; in the valleys are a few fields or steppes covered with tall grass. The chief stream is the Mlagarasi. It is very deep in its lower reaches. In the dry season it is 40 to 100 yds. wide, in the rainy season it overflows up to $2\frac{1}{2}$ miles beyond its banks. There are many crocodiles, and in its lower course *Glossina palpalis*. The tributaries of the Mlagarasi, running from the high plateau of Uha towards the S., are the Ruchugi, the Rugufu, and the Lwichi. These always contain water, and when the water is high are hard to cross. There are crocodiles and *Glossina palpalis*. The same holds of the Zindi coming from the S. Springs or pools are mostly foul or saline.

(c) **Ukawende, Ugalla, Ukonogo.** Sparsely populated uplands, covered with high foliaceous woods or with Myombo bush. They are watered by the Ruguwu and the Ugalla (Zindi). Both are difficult to ford in the rainy season.

(d) **Ufipa.** Plateau covered with short grass, wooded only on the western slope; towards the W. the land falls steeply away to the Rukwa lake. It is watered by many short rivers, full of water, which flow into the Tanganyika. The largest is the Kalambo, which for the most part flows towards the S. (not navigable).

(e) The plain of the **Rukwa** lake. This runs between Ufipa and Ugalla from SE. to NW. In the neighbourhood of the lake it is marshy with short grass, in the N. there is long grass. The south-eastern boundary river (the Saisi) has water even in the dry season. The Rungwa, which flows from the N. into the Rukwa lake, is to be crossed only by boat in the rainy season.

Climatc.—The wettest months for Ujiji and Bismarckburg are December to April. Some rain falls in May, October, and November. In the high plateau one can count on some rain throughout the year. (See Appendix I.)

The temperature, night and day, is high on the shore of the lake, which lies 2,500 ft. high. In the rainy season it is oppressively sultry. On the bare plateaus of Uha and Ufipa it is fresh and airy during the day and very cool during the evening, night and morning. When going up from the lake into the higher surrounding country, this sudden change must be reckoned with.

Diseases.—Residence on the wooded shores of Tanganyika and its affluents involves the danger of sleeping sickness. All the camps on the caravan routes are subject to relapsing fever. For tsetse see Chapter XI.

XIV.—DISTRICT OF TABORA

This District is situated on the central plateau, the formation of which is mainly gneiss, to the W. of the East African Rift valley. Altitude 3,600–4,300 ft. above sea-level. Gently undulating, with slightly larger eminences in the NE. The most important of these is Yande-ya-mloha in Msalala. Sparsely wooded massifs, 1,000–1,300 ft. high and separated by passes. In the following places there are single hills, partly consisting of bare felspar: in Zalawe, on the N. bank of the River Gombe from the telegraph line as far as Unyankulu, in Ukumbi, Ulungwa, Tinde, and Zamuye. To the E. a more or less steep slope of about 1,000 ft. to the Wembere steppe, which is covered with a wild confused jumble of large granite boulders.

Two-thirds of the province is forest land—so-called dry or xerophilous forest (*Trockenwald*). It stretches over the whole of the NW. and the country on and S. of the Kilimatinde–Tabora–Ujiji

caravan road. To the N. and NE. the country changes to bush forest with baobabs, and towards the E. (E. of Ndala-Tambarale) becomes here and there a thick thorn-bush country.

The closely settled parts of the province, at Tabora and between the Wembere and Mbala steppes, are almost entirely open. The big steppes (Wembere, Mbala, and that on the western boundary in the source region of Utindi river) are open, and sparsely covered with high grass and *Acacia fistula*. The 'dry forest' is high-growing forest with rich underwood, which is particularly thick over places where there were formerly villages and fields, and makes progress very difficult.

At the end of the rainy season (February-May) and in the dry season before the grass is burnt in July and August, high grass obscures the otherwise good view obtainable in the forest. In the bush forest and thorn-bush country progress and view are greatly restricted.

The province has no lakes.

The rivers are divided into two systems :

(1) Those flowing to the Mlagarasi.

(2) Those flowing to the Wembere steppe.

(1) To the first river system belong :

(a) The **Utindi**, with its left tributaries the Mikongo and Kagozi.

(b) The **Gombe**, with the Salt river and the northern boundary river to the r. of the Kwanda country.

(c) The **Ugalla**, with the Wala.

The Utindi and the Gombe form at their junction in the rainy season the great impassable western frontier steppe. Rich saline deposits at the Salt river ; drinking-water is obtainable on its banks by digging.

(2) To the second river system belong :

(a) The **Manyonga**, which connects with Smith Sound by means of the Unyagubu and the Lisawe.

(b) The **Kwala**, the boundary river of the Kilimatinde District flowing into the southern portion of the Wembere.

All these rivers begin to flow in the rainy season, and often greatly overflow their banks. From March till May they are mostly only passable by boats in their middle and lower reaches. After the heavy rains they have very strong currents. There are crocodiles and hippopotami. On the banks are woods, 50-150 ft. wide, mostly bush and umbrella-acacias. The big steppes are impassable in the rainy season. In the dry season the rivers form ponds and pools varying in length up to 3 miles, the haunts at that time of fish, crocodiles, and hippopotami.

Climate.—See Appendix I for dry and rainy seasons.

The average lowest temperature by day is 61° F., the highest 86° F. Warm clothing is not generally necessary.

Diseases.—The camping-grounds along the caravan route as well as Tabora itself are hotbeds of recurring fever. Malaria is frequent on the caravan routes, in the steppes, and the river valleys. For tsetse see Chapter XI.

XV.—DISTRICT OF DODOMA¹

The District is cut through by the East African Rift valley in a N. and S. direction. In the N. it is very steep, in the S. level. Four regions may be distinguished: (1) Ukimbu with Ikungu and Uyanzi; (2) Ugogo; (3) the mountain country round Mpapwa; (4) Turu.

(1) **Ukimbu.** Very undulating, with isolated, sharply-rising heights (the high plateau of Itumba), covered almost throughout with Myombo wood (*Acacia spirocarpa*). (In Myombo wood tsetse-fly is usually found.) This region is relatively sparsely settled.

Only the frontier river, the Myombe (Msombe), has always water in it; in the dry season it is a small watercourse, flowing under the sand in places. In the rainy season it has much water, as has also the otherwise dry Kizigo, into which the Myombe flows. There are crocodiles in both rivers, but nowhere else in the District. There are frequent long, waterless tracts.

Ikungu and Uyanzi are very similar.

(2) **Ugogo.** Chiefly plain, bounded on the SW. by the Kizigo, on the W. by the East African Rift valley. In the eastern part, in the neighbourhood of Kwita, there are numerous small mountain cones; the Nbahi and Ngnando mountains are remarkable in shape. In the southern part (the neighbourhood of Konko) are bare rounded hills formed of great masses of rock. The covering of the ground is low wood, with thorn-bush. The inhabited land is moderately bare. In the centre is an undrained swamp district, in which the Bubu and Mtive rivers lose themselves; it is impassable in rainy weather. Water is scarce and bad.

(3) To the mountain country of Mpapwa belong the countries of Uhehe-West Usagara, Ugogo, Kaguru and the W. part of Nguru.

¹ It is a little doubtful how the various regions are distributed between Dodoma and Kondoa Irangi, as these districts have only recently been determined, and detailed information is lacking (see p. 19). It is believed, however, that the distribution given is at least approximately correct.

Uhehe-West Usagara stretches S. of the central railway to the Great Ruaha and is bounded on the W. by the waterless Marengamkali. The mountain country has its greatest heights in the line Gulwe mountain (2,000 ft.), Yatumba mountain (1,600–2,300 ft.), Mbaga mountains. Its highest peaks are covered with rain forest. They accordingly possess a more humid atmosphere and a larger number of spring streams than the steppe, which is covered with umbrella-acacia and thorn-bush. The slopes of the mountains are usually covered with great flat stretches of grass. Water is always to be found in the Great Ruaha. It cannot be crossed everywhere even in the dry season. Crocodiles. The other rivers only have water in the rainy season, and constitute no absolute obstacle.

The **Ugogo** plateau is largely overgrown with thorn-bush, in which the pasture land for the native cattle has been made by rotation of crops. Perennial water is only to be found in a few places at the foot of the mountains. The water-holes which are made by digging dry up towards the end of the dry season. In places the cattle can only be watered every other day. Water-borings along the central railway have shown that springs can be found to yield water at many places.

Kaguru and the W. part of **Nguru** is partly mountain country (Itumba or N. Rubeho mountains) from 5,000 to 6,500 ft. high, partly upland from 2,300 to 3,300 ft. high. The mountainous part has the same character as W. Usagara. In addition the whole region is fruitful and well watered, and there is much cattle-rearing on the Masai steppe and the western edge of the Nguru mountains.

The Romuma river flows into the River Kinyasungwe (30 miles NW. of Kilosa), marking the boundary between Mpapwa District and Kilosa (Morogoro District). Even at the end of the dry season it is 9 to 13 feet broad and 2 to 3 feet deep.

The Buguma river or rain stream runs round the west foot of Mt. Gulwe, $2\frac{1}{2}$ hours' railway journey S. of Mpapwa. The river bed is used as a road by the natives during the dry season.

The Mwega river flows from Kidete region into Ruaha river near Masombe, and is some 13 yards broad about 5 miles above the point where it flows into the Ruaha.

The Mchazima river joins the Mwega river 6 miles above the point where the latter joins the Ruaha, and has clear water all the year round.

(4) **Turu**. High plateau with ridges rising from it. Grotesque rounded hills of gneiss are characteristic. The country is covered beyond the cultivated land with thick, almost impassable thorn-

bush. This bush, which is characteristic of Turu, towards the frontier changes to more or less thin Myombu wood.

The cultivated part of the land forms large, connected, flat stretches, over which a good view can be had. It is thickly inhabited and quite open, with the exception of the peculiar euphorbia hedges.

There is no perennial flowing water, but many springs. The water of the big lakes of Singida, Kindai, and Balangida, of the Tongo marsh, and also of the other smaller lakes and marshes in North Turu is saline, and not fit for man's use. The water of the Munyati lake in East Turu is sweet. To the N. of Turu, at the distance of a day's march, there is a markedly volcanic region with about eight characteristic larger and smaller crater lakes. Of these the two largest, Ushuto and Bashurish (also called Washodesi), have sweet water. The Balangida lies in the East African Rift valley, the others in a parallel depression to the west of the Rift valley. The marshes to the N. of the Singida lake are impassable in the rainy season, but can easily be passed by a *détour*.

Climate.—The lesser rainy season from the middle of November to the end of January, the greater in March and April. In normal years small precipitation. (See Appendix I.)

The climate is temperate but very hot in the Ugogo steppe in the middle of the day.

In Turu, as also in the mountains in the S. towards Uhehe, in N. Rubeho (5,000–6,000 ft.) and in the highlands of Itumba in Ukimbu, it is distinctly cold in the night and morning from the end of May to the middle of September. In high camps at about 5,000 ft. warm clothing is necessary. There are frequent fogs.

Diseases.—Leprosy is endemic in Ukimbu, and there is recurrent fever on the caravan routes in old camping spots and dwelling-places. For tsetse see Chapter XI.

XVI. DISTRICT OF KONDOA IRANGI¹

The whole District belongs to the central steppe region of German East Africa. It may be divided into four districts:

(1) The mountain country round Kondoa Irangi; (2) Usandawi; (3) Iyambi, Isanzu, Iramba, Usure; (4) the Masai Steppe.

(1) To the mountain country of Kondoa Irangi belong the countries of Ufiome, Mangati, Uwasi, Irangi, Burungi.

¹ See foot-note under Dodoma, p. 149.

Ufiome is undulating hill country with sharply defined forms in the W. part, and with a steep fall to the Rift valley edge as far as Mangati. The three-peaked Mount Ufiome is covered towards the top with tropical rain-forest. Several brooks rise on its peak, but only a few carry water into the plain at the end of the dry weather. The valleys of the Kizese and Seai streams are well watered and highly cultivated. The heights and valleys between Kizese-Kikole and the plain east of the Basuda lake (Maitsimba lake) are mostly covered with light Myombo wood and grass steppes. Great Ufiome, lying on the eastern slope of the Ufiome mountain, is fruitful and has good pasture towards the Masai steppe. Here millet (*uwele*) is principally cultivated. The Basuda lake is over 6 ft. deep in the centre. The water is brackish, but drinkable. The shores are muddy. The country between Basuda lake and the rise out of the Rift valley is very mountainous and rich in water. Myombo wood alternates there with good woods for building, thorn-bush, thorn-trees, and evergreen shady trees. On the Rift valley ridge there are steep slopes with high grass and ferns, rock boulders, and a thin growth of trees.

Mangati is, on the whole, slightly undulating upland country. Wide steppes offer good pasture. In between there are tracks of thorn-bush and Myombo wood. The steep fall of the Rift valley towards Mangati is covered with thick thorn-bush. The climb up and down is very difficult. Twelve streams, which belong partly to the river basin of the Bubu, flow down the Rift valley from Balangda lake to the Pass of Meri. They have water all the year round. The water of Balangda lake is salt. It dries up in the dry season, so that its bed is covered with a thick crust of salt. There are unimportant settlements with small tilled fields at Masogoloda, Murmurang, Muhitu, Enda Bega, Ndareda. In the dry season part of the Wataturu wander with their cattle into the grass steppes in the S. and W. of the Gurui mountain, or on to the western Rift valley mountains. In the S. of Mangati lies Gurui mountain, nearly 12,000 ft. high, from which several streams flow to the S. and W. : they carry water even in the dry season, but soon dry up at the foot of the mountain. The lower part of the mountain is covered with virgin forest, chiefly cedar, but also alternations of thorn-bush and Myombo wood. The upper part is bare. On the S. side lies a big crater.

Uwasi is a broken mountain country with numerous rocky rain-courses. No field of view is obtainable. There are fields in the valleys, generally thorn-bush on the slopes, and woods with nut-trees on the mountains. The rains are heavier than in Irangi.

Irangi is a mountainous country of from 4,000 to 5,000 ft. high. Many bare rocks show on the rounded summits. The country is poor in wood and is much cultivated. Thorn-bush is only found on the N. and E. slopes of the Irangi mountains: higher wood on the Mkoga mountain. E. of the Irangi mountains the land falls somewhat steeply to the Masai steppe. The chief river is the Bubu: the affluents on the l. are the Mkondoa stream and the Kerema or Dalai stream. They run underground in the dry season, and water can easily be obtained by digging in the river bed. In the rainy season, when the water comes down, they are impassable for a few hours. Marshes are not present.

Burungi is for the most part very mountainous and much covered with thorn-bush. On the boundary towards N. Ugogo is a large steppe covered with light bush and trees. There are cultivated fields only to a small extent. The rainfall is slight. Floods do not occur in the rainy season.

(2) **Usandawi**, in the East African Rift valley. Mountainous, with sharp ridges. So far as it is uncultivated, thick wood, very difficult to penetrate off the paths. Numerous streams in the ravines, drying up in the dry season. The largest is the Bubu. Water is always to be procured by digging in the beds of the rivers.

(3) **Iyambi, Isanzu, Iramba, Usure**. Iyambi and Isanzu are somewhat alike. Mountainous country with numerous rounded summits of gneiss and granite. In Isanzu there are many steep places. Iramba plateau falls away steeply on all sides; it is undulating on the top. To the east of it is the broad Dulumo valley, to the W. the Wembere steppe (which is 6 to 8 hours' march across) with the Zimbiti river. Bulatti, the affluent of the Zimbiti, always contains water; it comes from the W., out of Usukuma, and becomes a marsh where it enters the Zimbiti. The Zimbiti only flows out of the marsh in the rainy season. The upper course of the Zimbiti is also dry in the dry season. The Zimbiti runs into the Eyasi lake (brackish water). The Kironda and Dulumo rivers have a constant flow of water in their upper courses. The other rivers are dry in the dry season; water can, however, always be got by digging in the sandy river beds in their upper courses.

Usure is wooded country with mountains in the SW. part.

Iyambi and the rest are almost bare, with low bush on the hill-sides.

(4) The S. part of the **Masai Steppe** is mostly flat, with a few mountains composed of masses of rock. The same thorn-bush

predominates as on the Ugogo plain, but there are also intervals of extensive grass steppe. The rivers are nowhere any hindrance to travel. The conditions for obtaining drinking-water are highly unfavourable in the dry season.

Climate.—To a moderate rainy season of five months (December to the beginning of May) there succeed six to seven months of absolute drought (see Appendix I). On the plateau of Iramba it is fairly cold. Frequent fogs and cool nights make warm clothing necessary. The temperature of the plateau in this District and the country round Mpapwa varies between 50° and 91° F., and that of the mountains between 39° and 86° F. The dry air of the plateau is highly refreshing, but the strong wind and the dust of the dry season are very troublesome.

Diseases.—The mountain districts are said to be free of malaria, but it is found in the valleys, and recurrent fever is found frequently everywhere. Leprosy is endemic in Iramba. For tsetse see Chapter XI.

XVII, XVIII. DISTRICTS OF MOSHI AND ARUSHA

These Districts are traversed by the East African Rift valley, a volcanic fissure. The side of the Rift is steep, rising to 2,300 ft. Direction north to south. Six regions may be distinguished: (1) the Pare Mountains; (2) the Pangani and its source-region; (3) the Masai Steppe; (4) Sonyo; (5) Ubugwe; (6) Umbulu and Dungobösch (Iraku).

(1) **The Pare Mountains.** About 80 miles long, 9–10 miles broad, rising abruptly out of the plain. Three divisions, North, Middle, and South Pare. North Pare within the province: at its highest peaks about 6,500 ft. Very rugged hill-country: in the direction of Lake Yipe it ends in two high spurs, Mt. Gaumala and Mt. Lomwe.

On the E. slope rich herbal vegetation; higher up dense tree-forest. On the W. slope dry steppe vegetation; higher up euphorbia-bush, then tree-forest. Inhabited country open, interspersed with densely wooded strips.

E. slope very well watered; in the rainy season streams reach Lake Jipe. In the dry season they dry up in the steppe. The W. slope is considerably drier, and streams are rare; they dry up at the foot of the mountains. Lesser rains November–January; greater rains in March and April (see Appendix I).

Severe climate in the mountains, sharp east winds. Warm clothing necessary for Europeans, native troops, and porters.

(2) **The Pangani and its source-region.** Waters from Mount Kili-

manjaro, Mount Meru, and Lake Jipe unite at Arusha Chini (Lower Arusha) to form the Pangani, which henceforth runs southwards parallel to the Pare range. The Pangani, which contains flowing water throughout the year, is 10-45 yds. wide, swift in the narrows, but without rapids as far as Bwiko (many crocodiles). Even in the dry season it can only be crossed at fords or by bridges. The region between the Pangani and the Pare range is a flat grass steppe, partly open, and partly overgrown with light bush (thorn). W. of the Pangani is the Masai reserve, a wide grass steppe traversed by the Chachame and Litema mountains.

Kilimanjaro (19,391 ft.) with eternal snow and ice, and Mt. Meru (about 14,960 ft.) are wildly rugged and broken mountain masses of volcanic origin. Between Arusha Chini and Kilimanjaro stretches high-growing virgin forest (the Rau Forest). Woods, bush and steppe at the foot of both mountains; then the inhabited zone; above that, the girdle of virgin forest, and then luxuriant herbal vegetation (the fern-zone).

The E. and S. sides on the whole more thickly wooded, and woods descend lower. Numerous brooks and rivers containing flowing water throughout the year. On the W. and N. sides of the mountains the descending brooks dry up either at the foot of the mountains, or after a few hours' marching-distance in the steppe. The gap between Kilimanjaro and Meru is very well watered.

(3) **The Masai Steppe.** Wide steppe covered with grass and bush (acacia); slightly undulating, with numerous abruptly rising rocky hills, and larger hill-ranges, much broken, mainly of volcanic origin.

The steppe is for the most part open, with wide fields of vision, and grass knee-high. Tree-growth sparse. Fuel often lacking. Fringes of wood only along the rain streams. Some mountains here and there completely bare, but as a rule bush-clad steppe is found at the foot of the mountains, with tree-forest up the slope or thick virgin-bush up to ten feet high (only passable with a bush-knife).

The numerous broad grass steppes are very poor in water during the dry season, and are in parts altogether lacking in water. Water usually to be found at the foot of the mountains. Permanent water-holes and water-courses on Mts. Longido, Ketumbeine, Rasha-Rasha, Lolgisale. In the rainy season there are also short-lived rain streams and pools. Water of somewhat doubtful quality is retained in broad, deep rock-pits between Arusha and Umbugwe, Arusha and Engaruka, Arusha and Ufiome, even into the dry season.

The water of most lakes—in the N. the large Lake Natron (**Magad**), in the S. Lakes Manyara and Lawa-ya-Zereri, and in the W. Lake Eyasi—is brackish and undrinkable; Lake Jipe (SE. of Kilimanjaro), through which the Lumi flows, has slightly brackish but still drinkable water. The western edge of a large sedge- and papyrus-marsh with bare banks adjoins it, which is traversable at fords.

(4) **Sonyo**. A small district on the NW. frontier of the province. Rock terraces, steep mountain-side: at its foot, partly in ravines, three villages. Much bush-forest about Sonyo. Perennially flowing brooks. Climate in the plains very hot during the day, very much cooler at night. In the mountains tolerable during the day; at night, especially May–September, decidedly cold. Sharp winds throughout the year. Warm clothing necessary for Europeans and natives.

In the above regions, (2), (3), and (4), the lesser rains occur in November–February; greater rains March–May. On Kilimanjaro and in the virgin forest regions rains throughout the year (see Appendix I).

(5) **Umbugwe**. Bare plain, bounded on the W. by the East African Rift valley and Lake Manyara (also known as Lawa-ya-Mweri), on the E. by Lake Lawa-ya-Zereri. A few low conical mountains on the edge of the region. Inhabited land treeless and shrubless. To the N., E., and S., wooded and grass steppe; to the W., the steep wooded side of the Rift valley. Lakes Manyara and Lawa-ya-Zereri are brackish; the latter has no affluents. South Umbugwe is traversed by the Kwo and Muburu rivers, affluents of Lake Manyara, with a perennial flow of water. In both streams the water is sweet. Rainy season as in Iraku (see below). Climate very hot during the day; hardly perceptibly cooler at night.

(6) **Umbulu and Dugobösch (Iraku)**. Rugged mountains about 5,900 ft. high, with many peaks. The highest are Mt. Gua in the middle of the inhabited district, and Mt. Hindamara, to the N. of it.

The inhabited country is bare; the virgin forest, which is nearly impassable, covers the mountain summits and the ravines. On the side of the Rift valley, about 2,300 ft. high, E. of Iraku, is sparse bush, which becomes denser and higher towards Lake Manyara in the NE. The side of the Rift at Lake Manyara is covered with virgin forest.

The many water-courses have a perennial flow of water. This is the region in which the Kwo–Bubu–Yaïda rivers rise. There are two freshwater lakes, Lake Basuta (Merker) and Lake Madumaka.

Lesser rains from the middle of October to the end of February ; greater rains March to May (see Appendix I).

To the S., towards Turu and Isanzu, undulating open, uninhabited steppes, grassy or wooded, with adequate watering-places. Towards Lake Eyasi (also called Nyaraza) the land falls away in hill-terraces. Facing Eyasi are the Shipunga mountains. The Yaïda river (perennial flow of water) forms the Yaïda marsh in the Kidero steppe, SE. of the Shipunga mountains. Water is very scarce except in the Yaïda. To the N. of Iraku, towards Ngorongoro, a hilly wooded upland, well watered (some streams flowing constantly), succeeded by an extensive plain, grassy and wooded, lying lower than the upland. On the long line of heights from Lake Eyasi to the side of the Rift, great dense virgin forest with many springs and water-courses. In the middle of it is Ngorongoro, the crater of an extinct volcano, 10–15 miles across, with one salt-water lake, two swamps (water drinkable but with a flat taste), and several brooks. Farther towards the N., the open Zerengeti Steppe. Watering-places here very scarce. In the Iraku highlands the climate is severe throughout the year. Warm clothing is absolutely necessary for Europeans and natives.

Diseases.—Recurrent fever at all the camping-places of frequented caravan routes, and in all places inhabited by the natives. It was reported in 1913 that malaria was beginning to appear in the Kilimanjaro and Meru Districts, and was already endemic at Leganga-Lendorf. In the space of four years six European officials had to be transferred from Moshi and Arusha to other parts of the country on account of heart-disease. For tsetse see Chapter XI.

XIX.—DISTRICT OF MWANZA

There are three regions to be distinguished :

(1) S. of Lake Victoria from Emin Pasha gulf to the eastern corner of Speke gulf.

(2) E. of the lake from the eastern corner of Speke gulf to the English frontier.

(3) At a distance from the lake, the Masai Steppe, which borders on the Great Rift.

(1) **South of Lake Victoria.** On the shore there are numerous bays, deeply indented in places (Emin Pasha gulf, Mwanza bay, and Speke gulf). Many islands here. The most important are Kome and Ukerewe. At the mouth of the rivers there is marsh-

land, otherwise their banks are flat ; open country, alternating with wooded heights of gneiss.

Across **Uzinja** (Uzinza) and **Usumbwa** stretches a bare mountain wall of ironstone (siderite), from W. to E. In the W., in the regions of Buhindi, Bugando, Butundwe, and Buhole, mountains rise to a height of 1,100 ft. above the sea-level. The mountains of Uzinja, rich in iron, are covered in the W. with dense Myombo woods, in the E. with bush, and afford good hiding-places for man and beast. There are no caves. There are grassy steppes, poorly supplied with game, between the detached ranges of hills. It is very difficult to find one's way. Footpaths should only be used with a guide, as they are difficult to find and involve great détours. Along the coast of Uzinja it is difficult to find the way by boat, owing to the complication of islands and peninsulas.

Flat-topped hills crowned with granite boulders are characteristic of **Usukuma**. At their foot, and between the granite boulders, high hedges of wolf's-milk or candelabra-euphorbia enclose the huts and farms of the natives ; otherwise the country is quite open in the places where settlers are numerous. Nothing but pasture and fields. Little opportunity afforded for ambush and concealment. It is easy to find one's way even without a guide. On the Simiyu and to the E. of it, there are wide stretches of bush-covered steppes infested with tsetse.

Abundant water-supply of more or less good quality from springs and cisterns during the whole year. Of the rivers, the Simiyu carries a continual supply of water in its lower course, where it can be crossed on foot only in the driest season. During heavy floods, in the rainy season, it can be crossed in canoes only a little above the mouth. Many crocodiles.

The small river Kafurizo, which empties itself into the Bugando bay in the gulf of Emin Pasha, is said to have water during the whole year. Otherwise, the rivers flowing from the S. into Lake Victoria are mere rain streams the whole way. Their beds are mostly insignificant ditches, cut into hollow troughs of pitch-black clay : these overflow in the rainy season. A deeper bed, and consequently in the rainy season a rushing stream, is found (apart from the Simiyu) only in the Moame and Magogo (in the Stuhlmann-sound) and the Duma.

(2) **East of Lake Victoria.** The character of the bank is the same as in the southern part, but becomes flatter towards the N. The interior is mountainous with few exceptions. Precipitous cliffs and great rock caverns in Uzanaki. High and steep elevations in Ushashi. The Chamliho is visible from a great distance. The

heights and some of the depressions are covered with bush. In the uninhabited steppes high grass. Near Shirati much sansevieria. Few fields, more open country.

The Mara has always water and can only be crossed by boats. Crocodiles. The Mori, Suguti, Ruwana, Grumeti, and Mbalangeti are at times unfordable in the rainy season. Crocodiles. They rise quickly but they also fall quickly. At high water they are very rapid, and crossing in canoes involves considerable danger. They hold water for a long period in holes during the dry season. Water in their lower courses can always be found by digging in the river bed. In the mountains many good springs and streams.

(3) **Masai Steppe.** Slightly undulating high plateau, climbing from **Ikoma** towards the E.; then rounded mountain tops suddenly spring up or greater ranges covered with rocky boulders as at Olgoss. From here as far as the edge of the Rift valley is an inhospitable mountain region over 6,500 ft. high (Ndasekera Mundorosi). From Ikoma to Olgoss thick thorn-bush; east of Olgoss in the valleys open steppe with short grass, on the mountains impenetrable virgin forest. Five hours SE. of Ikoma the flat, treeless Zerengeti desert encircled by high bush-covered mountain ranges.

Great lack of water in the whole steppe region. In the upper courses of the Grumeti, Orangi (Bololedi in the country of the Wandorobbo), Mbalangeti, there is perennial water only in few rock holes; otherwise only springs yielding little and fouled by wild animals. After rainfall, water in rock cisterns, mostly known only to the Wandorobbo. Good water at **Meroga** and **Oliondo**, NW. of Sonyo. On the western edge of the Zerengeti, the Syonera holds water in holes during nearly the whole year. In the dry season it is saline, but still drinkable for human beings. On the nine days' track Ikoma to Ngorongoro through the Zerengeti there are only two perennial watering-places. This route can only be used during the rainy season or soon after.

Climate.—For all districts in the District of Mwanza the smaller rainy season occurs in November and December, the greater in March and April. In the Masai steppe the greater and lesser rainy seasons merge into each other. In normal years there is little rain there (see Appendix I).

Nights in the Masai steppe E. of Olgoss very cold. Tents and coverings necessary for Askari and porters.

Diseases.—In Mwanza and in the other ports there is the danger of the entry of plague from British territory. Mwanza and the caravan routes are infected with recurrent fever. Malaria is endemic.

The country of the Wagaia N. of the Mara is closed on account of sleeping sickness: the great islands of Maisome and Luwando lying in front of Emin Pasha gulf seem to be infected. The other islands of the lake, and the lake-coast in Uzinja, are also threatened by sleeping sickness. In Ushashi, at the beginning of the rainy seasons, symptoms of dysentery appear. For tsetse and coast-fever see Chapter XI.

XX. DISTRICT OF IRINGA

The District may be divided into five principal zones:

(1) Territory about 30 miles in circumference from **Iringa** station. Hilly high plateau, the hills bare. Low ground open and for the most part well cultivated. Numerous streams always running with water. For the most part thickly populated and very rich in live stock (cattle, &c.); abundant supplies and good road system during the whole year.

(2) **Wahehe** provinces (Utzungwa, Ukwega, parts of Usagara). Rugged mountains, with numerous large ravines and some important heights, make operations difficult. The population is collected in groups in the places which are fertile and correspondingly well cultivated. The other parts are deserts and without supplies. The spurs of the mountains from Utzungwa to Mahenge and the parts along the Ruaha and the road to Kilosa are well cultivated; all others are very poorly, so that a large body of troops would be dependent on additional supplies. Everywhere and always plenty of water. Apart from the Kilosa-Muhanga road, movement is difficult.

(3) **Ubena**. A high-lying, undulating, cool plateau, about 4,000–6,000 ft., for the most part open and covered with short grass. Only occasionally does one find larger stocks of trees of the so-called Myombo wood (*Acacia spirocarpa*), which cease altogether in the southern part. Water everywhere at all seasons. The Wabena, mixed in the northern part with the Wasangu and Wahehe, in the southern with the Wapangwa, are mostly occupied with agriculture, but also, especially in the northern part, they are successful cattle-breeders. The supply for a not too strong body of troops would not cause any difficulty in the more densely populated districts, e.g. in the neighbourhood of the Ubena post and the missions. There would also be no lack of meat, owing to the fairly considerable herds. Ubena is traversed by a good system of roads, which radiate star-wise from Ubena post. The mission stations are also connected with each other by good roads.

(4) **Usangu** is for the most part an open, hot plain, shut in by

chains of mountains. The plain is, in most places, covered with thorn-trees and bush, but there are also wide open grass steppes. The reed-like grass reaches a height of over 6 ft. in the rainy season. After the burning in the dry season, the land is like a flat threshing floor. The ground is then much cracked and torn. The whole district is cut through by the much-ramifying river system of the Great Ruaha. The Ruaha and its larger tributaries can only be crossed by boats or little fords or a few primitive bridges placed there by the natives. During the rainy season large stretches of land are under water, and even in the dry season there remain large marshes difficult to cross. The Wasangu are, above all, cattle-breeders, and have great herds of cattle, sheep, and goats. They only grow enough crops for their own wants.

The population is unevenly distributed: the northern part is very thinly inhabited. A strong force could live only in the more populous parts of the land and then only after normal harvest; otherwise additional supplies would be necessary. But, owing to the herds and wild animals, there is always more than enough meat. Communications good in the dry season, but made very difficult in the rainy season by the floods.

(5) The district bounded in the S. by the Great Ruaha, in E. and N. by the Kizigo, in W. by the Myombe (Msombe).

Open, hot, dry plain-country, for the most part covered with thorn and baobab trees (*Adansonia digitata*); from Sadallah W. to Mpwasia thick, waterless, quite impassable thorn-bush. The chief rivers Kizigo and Myombe, and their tributaries, have only water in the rainy season. But at this time they rise to such an extent that boats must be taken for operations. The district is very thinly populated; supplies everywhere scanty. Very few herds, but plenty of wild animals. Additional rations are necessary; except in the neighbourhood of the Ruaha river system there is little water, and often only at intervals of a two days' march. Communication limited to the roads Iringa-Mpapa and Iringa-Kilimatinde; otherwise few people and little water.

Climate.—Of the District as a whole it may be said that the SE. toward the Ulanga, and particularly in the NW. and N., in the river system of the Great Ruaha, there are hot plains, while in the central portion there are cool plateaus with considerable heights. In the plains there is real tropical climate, but in the highlands, particularly from May to September, it becomes distinctly cold. There is nearly always a raw, sharp wind. Warm clothing is therefore necessary. The minimum temperature, from observations taken in the mountains, is 41° F.

The rainy season is from December to April. (See Appendix I.)

Diseases.—There is malaria in the plains, while the highlands, with the exception of a few river valleys, are free from it. The great caravan roads, without exception, are infested with recurrent fever. With regard to other diseases, there should be mentioned as former plague centres the station Iringa and its immediate neighbourhood, with the mission station, Tozomaganga, and also the mission stations Madibira and Ilembulu.

Leprosy centres are found in the neighbourhood of the mission Madibira and in the extreme SW. on the boundary between Iringa and Langenburg (Magoye mission). For tsetse, &c., see Chapter XI.

XXI. DISTRICT OF MAHENGÉ

The District consists of (1) the mountainous part in the middle and SE. ; (2) the surrounding plain.

(1) The mountainous part contains for the most part rugged formations, and on this account as well as because of the overgrowth of vegetation presents difficulties to the carrying on of war.

Masagati has deep-cut valleys.

Mgende, of almost South African table-mountain character, has steeply rising mountains which in some places can only be climbed with ladders. At the time of the Mafiti invasion they provided the natives with useful hiding-places. These table mountains extend as far as the junction of the Luwegu and the Marangandu.

The steepest and most impassable is the **Upogoro** and **Ndwewe** range. In the Upogoro Mountains the Muhulu range, running from N. to S., towers to a great height, and can be seen a long way off. S. of this the Mahogo mountains run E. and W.

The vegetation consists for the most part of open Myombo wood ('dry forest') and in the higher parts of virgin forest. Masagati in particular has much virgin forest. On account of the high sedge grass the broad valleys in Mgende offer the poorest possible field of vision.

The mountain country is very rich in water, and even in the dry season there is always plenty of water for fairly large detachments of troops. At the worst it could be got by digging in the river courses.

(2) The plain in the N., E., W., and part of the SE. of the District has only low elevations. In the NE., where the Luwegu runs into the Ulanga, the Mberera range rises up out of the plain and is visible from a great distance.

Apart from a few small swamps the ground presents no difficulties.

The growth consists mostly of high, thick grass, particularly in

the neighbourhood of the rivers. Almost everywhere good opportunity is afforded for sudden attacks and surprises. From October to February, as the result of grass fires, one can get a much better field of view than at other times.

The water-conditions of the plain are excellent. The Ulanga stream and most of its tributaries have perennial water. In the driest season there is never lack of water.

On the other hand, the streams constitute serious obstacles. Even in the driest season the Ulanga and parts of its tributaries are more than 6 ft. deep. In the rains they form large flooded areas. Even the big high roads are then often knee or breast deep in water. In all the bigger rivers there are crocodiles.

Climate.—The rainy season lasts generally from December to May. A slight rainfall has been observed in some years in February. It rains very seldom in the dry months. (See Appendix I.)

The temperature of the plains is only a little lower than that of the coast-lands. In the cool season (July to September) the thermometer falls sometimes before sunrise to 50° F. in the mountainous parts. In these parts there is often towards evening a strong SE. wind. On the whole, during the cool season, warm clothing is not necessary, except at night. There is heavy dew nearly every morning, and in the mountains often mist as well.

Diseases.—Malaria is endemic in the whole District as far as the Upogoro range. Recurrent fever on all the large caravan roads, particularly in the native huts and inns. Helminthiasis and elephantiasis are found on the upper Ulanga; isolated cases of leprosy and dysentery in the Upogoro range. For tsetse see Chapter XI.

XXII. DISTRICT OF BUKOBA

The District consists of mountain land. The following regions may be distinguished:

A high ridge along the W. coast of Lake Victoria, a second about 50 miles west of the first, stretching from Kagera Bay to the Urigi Lake and further to the Uhimba country. W. of this the high land of Karagwe. In the S. in Usuwu, a crowd of irregular ranges of hills. In Kiziba and Bugabu many caves. Low grass growth mixed with shrub and strips of woodland. In low-lying parts extensive papyrus marshes. In the neighbourhood of dwellings great banana groves. Larger stretches of wood in the N. (of which the most important is the Minziro wood in Buddu, N. of the Kagera) and also in the SW. and SE. parts of the District. In the middle of the District such woods are less frequent.

Chief river—the Kagera and its right-bank tributary Ruwuwu, which is the western frontier as far as the Ishangu country.

The next important tributary of the Kagera is the Ngono, which flows from S. to N. and joins the Kagera shortly before it enters Lake Victoria.

In the S. the Lohungati (Bugere or Ruiga) river which flows into the Bay of Ruiga. N.B. Two rivers in this district are called Ruiga.

Numerous fresh-water lakes (crocodiles and hippopotami) of which the largest are Lake Ikimba and Lake Urigi, in the depression between the above-mentioned mountain ranges. Lake Ikimba (24 miles SW. of Bukoba station) lies in a hollow : very marshy land NNW. of lake : water drinkable, best at S. end. Average depth 9–16 ft.

Lake Urigi (according to recent information, Burigi) lies $27\frac{1}{2}$ miles WSW. from Luwumbo : surrounded on N., E., and W. by unwooded hills. It is about 18 miles long. Water drinkable : maximum depth about 14 ft. (4.2 metres). The Ruiga flows into it at S. end, and is merely a series of waterholes in the dry season. The Kasingeini is another tributary of Lake Urigi. The Mwisha (Ngoma valley) is fed by the waters of the lake.

Lake Kihonde lies W. of Kagera River, S. of Lake Ihema, and on a level with Migera ferry.

In this District, with the exception of some parts in the S., the rivers have water even in the dry season and for the most part can only be crossed at ferries.

In the rains there are here and there flooded areas, the biggest on the middle course of the Kagera, from the Migera ferry for 45 miles down stream, with many little lakes and papyrus marshes ; it can only be crossed in the middle at the Ishangu ferry.

Climate.—For rainy and dry seasons see Appendix I. Moderate, cool nights in parts. Highland of Karagwe cold ; warm clothing recommended. Lake Victoria is 3,710 ft. above sea-level ; the inland interior on average is 4,265–4,600 ft. Mountains rise to 5,000 ft.

Diseases.—Malaria in whole District. Recurrent fever is frequent. Sleeping sickness only sporadic, but the *Glossina palpalis* is found on the coasts of Ihangiro and Kimoani.

Sleeping sickness concentration camp at Kigarama, two days N. of Bukoba, and at Kizanya, 6 hrs. N. of Bukoba. Small-pox, epidemic. Coast fever has lately taken hold in the N.

Drinking water is everywhere to be had, but in parts bad and causing diarrhoea, as for example on the route Kifumbiro–Nsongezi ferry. For tsetse see Chapter XI.

XXIII. DISTRICT OF RUANDA

Ruanda is a mountainous country, ranging from 4,500 to over 9,000 ft., rising in terrace formation from E. to W. The western part, as far as the lower course of the Nyawarongo, is much broken, and its peaks attain to a height of over 9,000 ft. The lower eastern part has less sharp formations.

The Bugesera country (between the Akanyaru and the Kagera), Mpororo to E. of the Karusha swamp and Mt. Mashure, and the country between Mpororo and the Sultanate of Ishangu Muwari which belongs to Bukoba, are level uplands with occasional higher elevations, and have a scanty rainfall; Mpororo to the W. and N. of the Kakitumba stream is bare, the two other regions vary between bush and grassy steppe. The territory between the Lake of Mohazi and the Nyawarongo and Kagera rivers as far as Ishangu (Sangwe) is for the most part a bare tableland with deeply-cut valleys along and across, and occasional higher elevations. The valleys, often marshy at the bottom, dry up almost completely in the long dry season. There are hardly any running streams. The tableland falls away steeply towards the Kagera. The territory between 2° S. lat. and the Akanyaru is upland with higher elevations; numerous little brooks that never entirely dry up; the flatter valleys in parts swampy at the bottom. It is almost entirely bare country. All the rest of Ruanda consists of high mountains, the backbone of which runs for the most part in a S. to N. direction, often with steep edges and heights of 1,600 to 3,300 ft. above the general level. The high mountains, with the exception of two large, connected regions of virgin forest, Lugege and eastward from Bugewe, are bare up to the highest peaks. The region is mostly cultivated land, with bush only occasionally. The district to E. and W. of the great Mrushasi swamp is covered with thick bush. On the slopes of the volcanoes of the middle and eastern group is virgin forest of bamboos, on the slopes of the Niragongo is virgin bush. Numerous brooks abound in nearly every mountain-gorge; in the main valleys important, partly navigable rivers or large swamps. The higher and middle slopes of the volcanoes are very short of water in the dry season, because the rain-water flows away underground. Water is found in the deeper clefts of the valleys.

The Kagera, the Nyawarongo in its lower course, the Ruwuwu, and the Akanyaru are impossible to ford, even in the dry season. Widespreading papyrus marshes are often found on their banks.

In the volcanic districts of northern Ruanda there are many

large subterranean caves that could serve as refuges in troubled times for large numbers of men and cattle.

Climate.—The rainy season falls in the months between September and May. In the volcanic region of Kivu, where it is most plentiful, there is rain also in the other months. (See Appendix I.) The temperature in West Ruanda varies between 53° and 73° F. In the east it is rather higher. Warm clothing is necessary everywhere.

Diseases.—Dysentery and cholera and similar diseases are endemic. The danger of the introduction of sleeping sickness by the rivers and lakes is practically excluded. The introduction of recurrent fever on the routes Bukoba–Kigali–Kisenyi, and Kigali–Uzumbura from the Bukoba District is probable. For tsetse see Chapter XI.

XXIV. DISTRICT OF URUNDI

In Urundi four districts may be distinguished :

- (1) The Tanganyika coast.
- (2) The Rusisi plain.
- (3) The mountains bordering Tanganyika (Randberge).
- (4) The hilly upland of Inner Urundi.

(1) The **Tanganyika** coast consists of a narrow strip from $\frac{1}{4}$ – $\frac{1}{2}$ miles wide between the Ujiji frontier and Uzumbura ; here and there the Randberge run close to the lake.

On the bank, especially at the river mouths, much papyrus and sedge, in some places now cut down in the interests of the sleeping sickness campaign. Numerous oil-palm woods by the water-courses are characteristic.

Country mostly under cultivation : banana, manioc (cassava), &c. Otherwise grass and undergrowth. Generally it offers short field of vision. Many rivers with perennially flowing water : their slope is marked.

Chief rivers : Ndahangwe, Kanigi, Ndama, Mulembwe, Nyengwe, Luaba. No information as to difficulties in crossing them. Occasional crocodiles in the lake and at mouths of rivers.

Lesser rainy season from October to end of December ; three weeks' interval ; then greater rains till the beginning of June (see Appendix I).

Climate sultry and hot, but mitigated by the lake winds. Very many mosquitoes in the rainy season (malaria). Recurrent fever and sleeping sickness, but owing to a systematic campaign the latter has much decreased ; coasts and chief roads are supposed to be free of *palpalis*. The fly is restricted to the oil-palm and banana groves.

(2) The **Rusisi** plain is shut in on the E. and W. by the high Randberge, and the River Rusisi (the affluent from the Kivu lake to Lake Tanganyika) flows through it. In the lower part the plain is over $12\frac{1}{2}$ miles wide, in the upper (from about $12\frac{1}{2}$ miles N. of the Rusisi mouth onwards) it is, on an average, 3–5 miles wide. Here low lines of hills come close to the Rusisi.

Vegetation in the S. : large thick sedge (*schilf*), grass, bush, doum-palms (*Hyphaene*), banana groves ; in the mountains oil-palms and bananas. In the N. light bush forest in parts. In the rainy season field of vision small, owing to the high grass. In the dry season, the grass is burnt down to a great extent. The Rusisi is the boundary river between the German and Belgian provinces. Many fords and places where one can cross in boats. Many crocodiles. Chief tributaries on German side from the N. are : Luha, Nyakagunda, Njamagana, Kabulantwa, Kagunuzi, Mpanda. Good river crossings on the Uzumbura–Ishangi road (some of them bridges). Difficulties in crossing only after heavy rains, for example, on the Mpanda. Hot sulphur springs in the River Luha. Rusisi valley often very hot ; morning marches are therefore recommended. Particular care in choosing places for camps, since there is much recurrent fever. The road is free of *palpalis*. The Rusisi with its tributaries is certainly infested with the *palpalis* fly in the S. part, and is probably dangerous everywhere on this account. When fording suspicious places, head-veils, thick gloves, and thick underclothing (sweater or something similar) are to be recommended, as the flies sting through khaki.

(3) The **Randberge** rise steep and precipitous eastwards from Lake Tanganyika and the Rusisi plain up to heights of over 8,200 ft; and fall again to the E., in slopes for the most part equally steep to the Urundi upland. Breadth about 9–16 miles. The names of the principal mountains in the neighbourhood of Uzumbura : Mukike to SE., Kumanga to SSE., Mbona to NNE. Mountains nearly wholly bare, only grass and low undergrowth. In the valleys, small clusters of bamboo and remains of virgin forest. Larger patches of bamboo and virgin forest are found to the S. of the Mulembwe river ; also two days' march to the North of Uzumbura and in extreme NW. Urundi along the Ruanda boundary, joining up with the great stretches of virgin forest in SW. Ruanda. In the lower valleys oil-palms and bananas ; in the upper valleys bananas only. Countless mountain streams. Watershed between Lake Tanganyika on W., and the Ruwuwu and Mlagarasi on the E. side of the mountains. Difficulties in fording the deeply imbedded rivers only occur immediately after heavy rain ; the

water runs off very quickly. Much rain also out of the rainy season.

Temperature falls night and morning, often to a few degrees above freezing-point. With fog, wind, and rain, the climate is dangerous for carriers who are not accustomed to it and must spend the nights without tents and covers. Thick clothing necessary even for Europeans, sweaters useful. Hob-nailed boots, preferably with nails suitable for mountain climbing.

Special diseases not known, only great care to be taken in drinking the water, as a form of typhoid exists here.

(4) The mountainous highland of **Inner Urundi** lies 4,900–5,900 ft. above sea-level. The most distinguishable directions of hill-ranges are NW. to SW. and N. to S. Numerous deeply hollowed out valleys, most precipitous in the W. Particularly remarkable heights are: in the N., on the Rugwero lake, the Mungoma; in the NE., the Kameramogambo; in the middle of the Sultan's province, the Isaga; at the Mugera mission, Mt. Mugera; the two Kihinga ridges E. and W. of Mugera; and in the W. the Mwijeje and Wirime ridges, the latter close to the Muyaga mission.

Urundi is poor in woods; only along the rivers, particularly the Ruwuwu, occur thin patches of wood, mostly 'umbrella' acacias. A larger thin wood (also mostly acacias) to the S. and W. of the Rugwero lake and between the Rugwero lake and the junction of the Ruwuwu and Kagera. On the mountains and declivities, mostly only grass; in the valleys isolated remains of virgin forest, undergrowth, and bush. Where water is found, mostly papyrus marshes; these are very numerous and characteristic of Urundi. In the centre of Urundi bananas are remarkably numerous. Near the scattered hut-settlements are usually clusters of planted trees (e.g. Milumba and Mizawu). Everywhere in the country isolated groups of trees, often of great age; remains of old dwelling-places of chiefs and cemeteries.

Everywhere plenty of water; any lack of water practically excluded. Principal rivers: in the S. the Mlagarasi, which forms the boundary of the Ujiji District; in the centre, the Ruwuwu with its principal tributaries, the Muwarazi, Luwironza, Kahongozi; in the NW. of Urundi the Akanyaru, which forms the Ruanda boundary; and in the N. the Kabujenzi and Nyamabuno. On the Ruwuwu numerous ferries and fords. At Mugera large ferry boat; also at the Ruanilo and Bugufi ferries. The Ruwuwu from Mugera on can only be crossed in boats during the rainy season. The papyrus, which is to be found on nearly all

the small rivers and marshes, is excellent material for causeways and rafts. Principal crossing to Kisaka N. of the Rugwero lake.

Lakes : in the N. the Rugwero lake, only accessible from the SE. corner ; everywhere else thick impassable clumps of papyrus ; the Kanzigira lake connects with it by a narrow, marshy arm. To the W. of this the Chohoha lake, which stretches to the S. in a narrow arm with many creeks jutting far into the land about three times the length shown on the German 1:1,000,000 map (Sprigade and Moisel).

Climate.—The wholly dry season lasts only from the middle of June to the beginning of September. Principal rain period, March and April. There are seldom rains in the first three weeks of January. The climate must be called cool, and during the greater part of the rainy period cold, although at noon there is often a high temperature. The nights are mostly cold, principally owing to the mist which rises almost every evening from the papyrus marshes. For Europeans thick clothing is, therefore, advisable. Hob-nailed boots for mountain-climbing necessary for walking on slippery clay soil. Carriers to be housed, if possible, in huts ; if not, in tents with blankets.

Diseases.—Urundi may be considered healthy. In isolated places small-pox ; more frequently a kind of typhoid. Great care, therefore, is necessary with apparently good water. Recurrent fever is also observed in various places : many recurrent fever ticks in Uzumbura and in some of the missions. The road Uzumbura-Mugera-Usuwi-Bukoba is infected with recurrent fever.

CHAPTER VI

TOWNS AND DEFENSIBLE POINTS

I.—WILHELMSTAL DISTRICT

Wilhelmstal is the principal town of W. Usambara. Population of 200 white people. Centre of coffee trade with Tanga. Approached by a good road (practicable for motors) from Mombo. A small town, 1,500 metres above sea-level, standing in a mountain-basin: an ideal resort for those who want quiet and cool air. Houses belonging to residents on the coast. A good hotel, from which excursions can be made by foot or on horseback. A Volunteer Rifle Corps of 100 members has been started here. Climate good. Post and telegraph agency.

Defensible Points.

Some scattered houses in this District could be defended for a short time. The field of fire, however, is everywhere small. Houses on plantations almost all solidly built and roofed with corrugated iron. Missions: Protestant Missionary Society at Bumbuli, Bungu, Hohenfriedberg, Lwandai, New Bethel, Wuga; Congregation of the Fathers of the Holy Ghost at Neu-Köln; Leipzig Mission at Gonya, Mbaga, Wudei; Seventh Day Adventists, Friedenstal, Kuhulio, Uwazu; African Protestant Union, Lutindi. The station-buildings of the Usambara Railway are solid, and can be easily defended.

II.—TANGA DISTRICT

Tanga lies 136 miles N. of Dar-es-Salaam, 73 from Zanzibar, and 80 from Mombasa. It is the second town in importance in German E. Africa, and is the terminus of the Usambara Railway, which runs down to the pier-head. The railway station and workshops lie at the back of the town, about half a mile from the pier. On the pier are powerful cranes, which lift railway material, &c., straight on to the trains from the craft, which can come alongside.

The town stands on a plateau edged with cliffs of white coral, about 50 ft. above the sea, on the S. side of the bay, and is half

concealed in mango trees and coco-nut groves. The shores of the bay elsewhere are mangrove swamps.

The river Zigi discharges into Tanga bay; its entrance has about 3 ft. at low-water, and it is only navigable for a few miles, being obstructed by rapids.

The town consists of about 900 houses, of which 80 are of stone. About 8,000 inhabitants, of whom 300 are white.

Tanga is the residence of the District administrator.

Harbour.—Plans have been elaborated for the improvement of the harbour at Tanga. The present pier is a small one, suitable for dhows. There are two cranes, lifting 8 tons each. It is connected by a side line with the railway.

A concrete quay is being constructed: 200 yards were open for traffic in April 1914, the rest nearly finished.

The control of the commercial harbour has been given to the German East African Line, and by them to Messrs. Hansing and the German Colonial Railway Construction Company jointly.

A new crane to lift 10–15 tons has been erected. A new customs shed of 2,000 square metres area, with steel framework. Old piers, one steel, and one stone, still in use. Electric-light standards on quay.

Buildings.—There is a custom-house, and telegraph and post office. The other principal buildings are the Government offices, East African Steamship Company's offices, two churches, and the factory of the German Plantation Company.

An old rectangular stone fort near the harbour, described as a strong building with bastions, is now not needed for military purposes, and is used as a court-house and as a residence for officials. Near this fort is a small pier used for boats.

The principal street is the Inderstrasse, which runs parallel to the shore and contains most of the important buildings.

Supplies.—There is no better place than Tanga for supplies on this part of the coast. Meat is good; fish, vegetables, and fruit are abundant. Most of the live stock exported to Zanzibar comes from here.

Water.—The water-supply from two artesian wells is good and plentiful; the wells in the town should be avoided, as they are impregnated with sewage.

Workshops.—At the railway station are the workshops of the railway, containing the necessary tools for the erection of rolling-stock and for repair and alteration of machinery.

Town.—The port is connected with the town by a well-paved street, the 'Zollstrasse.' The town consists of three quarters, (1) European, (2) Hindu, (3) Native.

(1) *European*.—Zollstrasse leads into Kaiserstrasse. Principal buildings—Hanseatische Handels- und Plantagen-Gesellschaft, Post Office, Zanetti Hotel, Grand Hotel, Boma (Townhall), Casino, School, Hospital (on shore, near entrance to port, with two doctors and four nurses). Gardens and tennis courts.

The streets well paved : rickshaws and bicycles much used.

(2) *Hindu*.—The Hindu merchants do a good business, live in big stone houses, and are sometimes wealthy.

(3) *Native*.—Perhaps 10,000 natives in Tanga : the population fluctuates. Saturday night festivities in the Goma place.

Telegraphs and Telephone.—There is direct telegraphic communication with Dar-es-Salaam, Bagamoyo, Saadani, and Pangani.

There is a telephone service in the town, and telephonic communication over the telegraph wires with Dar-es-Salaam (and thence with Kilwa).

Hospital.—There is a hospital for Europeans under the supervision of Government doctors and trained nurses, with twenty-two beds ; also a hospital for natives.

Defensible Points.

No fortified places besides Tanga, but many massive buildings, with corrugated iron roofs which could easily be put into a state of defence—e. g. all railway stations, many buildings on plantations, some missions (two at Tanga, one at Mlingano, one at Magila, and also at Mkuzi and Korogwe).

III.—PANGANI DISTRICT

Pangani is the head-quarters of the District of that name. It is situated 38 miles south of Tanga, and 98 miles north of Dar-es-Salaam.

The town lies on the north (left) bank of the estuary of the Pangani River. This river is known as the Ruvu in its upper portion.

The town consists of about 140 stone houses, 700 half stone and half clay, and a large number of native huts. 3,200 inhabitants.

By the sea are two inns (the 'Souza Hotel' and the 'Pereira'), the custom house, post, telegraph offices, and the offices of the German East African and Pangani Companies.

A street runs westward through the town from the quay, where the district offices, the hospital, prison, and military barracks are situated,

A quay, with five landing-places for boats, has been built along the sea-shore.

To the north of the town lies a coco-nut palm grove, containing about 300,000 trees.

~~The town is very unhealthy, and the water should not be used.~~

Harbour.—The harbour is very dangerous to approach. Only vessels up to 10 feet draught can cross the bar and lie off the town. Vessels as a rule anchor 3 or 4 miles out in the roadstead.

Spring tides rise 15 ft. The effect of tides is felt for 22 miles up the river.

Trade.—There is a considerable traffic with Zanzibar and Pemba. Dhows load and discharge in the river. Oxen, sheep, fowls, and vegetables may be obtained.

A large quantity of sugar is grown here, in addition to the usual native produce.

The products of the country are brought down the river on rafts made of palm-wood, which are broken up and sold.

There is a sugar-factory belonging to the East African Company, which deals with sugar-cane cultivated by Arab settlers.

Defensible Points.

Besides Pangani and Handeni, no other fortified *points d'appui* in the District, but on all the plantations there are strong stone houses, more or less defensible, belonging to Europeans.

IV.—BAGAMOYO DISTRICT

Bagamoyo, the head-quarters of the District of that name, is 36 miles (= 2 days) north of Dar-es-Salaam, about 100 miles south of Tanga, and 36 miles from Zanzibar.

It is a great trading centre and the chief point of departure for caravans going into the interior; sometimes as many as 1,500 porters are to be found there waiting for work.

There are about 270 stone houses and 900 native huts. The normal population is about 5,000.

The most important buildings are the district offices, the custom house, post and telegraph office, German East Africa Company's buildings and caravanserai, the fort, and the mission house. The caravanserai belongs to the German East Africa Company and can accommodate 10,000 men. It consists of a central stone building, and rows of sheds, covered with corrugated iron, where the porters are taken in at 1 pie per diem.

The town stands a few feet above the sea-level, on the low but steep bank of a sandy bay.

Supplies.—Oxen, sheep, and fowls are always procurable and very cheap.

Cable.—Bagamoyo is connected with Dar-es-Salaam and Zanzibar by submarine telegraph cable. Also with Saadani, Pangani, and Tanga.

The town has a telephone service. There is constant communication by dhow with Zanzibar. The dhows are grounded on the beach and unloaded at low water.

Large vessels must anchor 2 miles out to sea.

Saadani lies about 16 miles north of Bagamoyo. It is a bad roadstead, but, as the starting-point of the northern caravan route to Mpapwa, has always had a considerable trade with Zanzibar.

In 1895 there was a big fire which destroyed 134 houses. There are 4,000 inhabitants.

Saadani is in direct telegraphic communication with Dar-es-Salaam, Bagamoyo, Pangani, and Tanga.

Defensible Points.

The Mandeia mission, 2 days SW. of Saadani, on the Wami river, would also serve as a well-fortified *point d'appui*: also the Mhonda mission in the Nguru mountains. The buildings on the Kisauke plantation of the Leipzig Cotton-spinning Company are massively built, but not fortified.

V.—MOROGORO DISTRICT

Morogoro is a small straggling town of 1,300 inhabitants (1908). Contains District office, Forestry office, Catholic mission, rest-houses, some European trading agencies, &c. There is a rifle-club.

On most of the European plantations near Morogoro station there are well-built stone houses; also at the mission stations, Morogoro, Mgeta, Matombo; railway stations of Ngerengere, Mikese, Morogoro, Mkata, have good defensible stone houses.

Good stone houses at the mica works at Chenzema and Ribuku (West Uluguru) and at the forest-stations Ribuku and Kasanga.

Kilosa is situated on a small hill, where the Mukondokwa river leaves the Usagara mountains. To the north and west high hills rise above the station, and to the south and east is marshy lowland. The climate is consequently very unhealthy and fever and dysentery are prevalent. Drinking-water is obtained from the Mukondokwa.

Cotton plantations with steam-ploughs (belonging to Heinrich Otto) are established here.

Kilosa is four days' march from Morogoro. It controls the area to the W. of the Mkata Steppe and Widunda. The position is defensible. No troops : only a few native police. There are about 8 Europeans, mostly railway men ; 2 railway sheds ; 2 small hotels, accommodation being very bad.

Defensible Points.

On several European plantations near Kilosa, good stone buildings, and also at the mission station Ilonga. Railway stations of Kimamba, Kondoa, Kilosa (extensive), Mwinisagara have good stone buildings, easily defended.

VI.—DAR-ES-SALAAM

Dar-es-Salaam, the seat of government and capital of the Protectorate, is one of the chief ports on the E. coast of Africa. The town lies in a crescent along the northern and north-western shores of an almost land-locked harbour.

The observation spot on the NW. side of the Government buildings is lat. $6^{\circ} 49' 41''$ S., long. $39^{\circ} 17' 8''$ E.

Harbour.—The harbour, which is about 3 miles in length and half a mile in width, is entered by a tortuous channel about 300 yards wide from shore to shore, but in places not more than 100 yards wide in the fairway.

Of the length of the harbour only the northern mile is used under normal conditions. The depth in anchorage ranges from $3\frac{1}{2}$ to 8 fathoms, muddy bottom.

No part of the harbour is visible from outside, either from land or sea.

The entrance has a depth of about 20 ft. at low-water spring-tides and 34 ft. at high-water spring-tides.

The shore of the harbour is sandy ; it rises from the water-line to a height of from 20 to 40 ft. Fringing the harbour elsewhere than at the town itself are thickets of mangrove, and coco-nut plantations.

The black buoy in the N. part of the harbour is for warships : the red buoy W. of Ras Mahabe is for Reichspost steamers.

At high tide water is very shallow. At L.W.O.S. there is half a mile of sand-covered reef.

Wharfage and storage accommodation.—There is not much facility

for landing stores, nearly all cargo from ships being placed on lighters and boats, and then man-handled on to quay or shore.

The Custom House store has storage accommodation far in excess of that required by the present trade. The German East African line also has a large store close to the Custom House.

A wooden pier, with a small crane capable of lifting about two tons, leads down to the harbour from the north end of the Custom House yard.

Near the military head-quarters is a small wooden pier, about 3 ft. in width, terminating in a barge.

It is reported that new docks and wharfs, with electrical appliances, are now in course of construction at Dar-es-Salaam, but details are not forthcoming.

A concrete landing-pier for boats has been constructed, and can be used at all states of the tide.

A 12-ton hand-crane has been set up and is ready for use.

A quay wall was finished early in 1907. In addition to the 12-ton crane, there are now three electric travelling cranes and a steam crane (two of which lift 2 tons, and one 1 ton), carrying goods from the lighters into the custom-house.

A transhipment godown has been built.

The landing-stage is connected by a siding with the railway.

The control of the commercial harbour has been given to the German East Africa Line, who delegate it to Messrs. Hansing and the German Colonial Railway Construction Company.

Floating dock.—A floating dock built of steel at a cost of £30,000 arrived in May 1901. The measurements are :

Length, 212 ft.

Breadth overall, 72 ft.

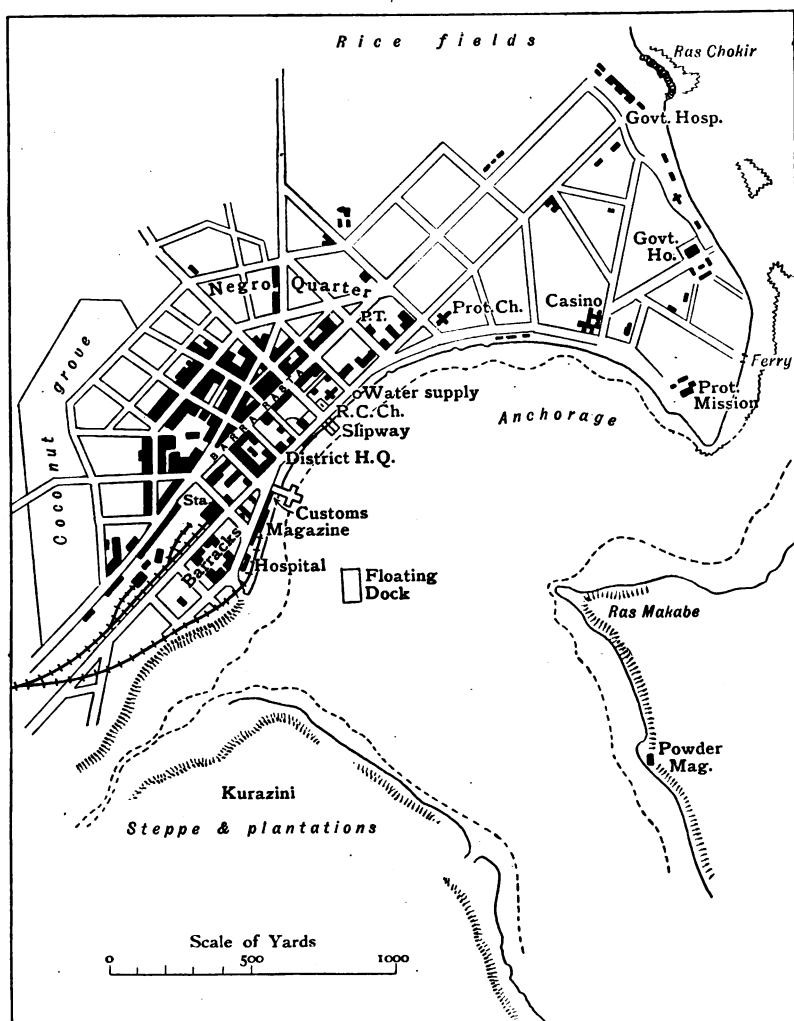
Breadth between fenders, 55 ft.

Lifting capacity, 1,800 tons (to be increased later to 3,000 tons).

Depth on blocks, 19½ ft.

This floating dock has been found to be too small, for there are very few ships plying in East African waters of less than 1,800 tons, which is the maximum weight the dock will take, and the revenue accruing from the use of it has been consequently low. A dock with a lifting capacity of 2,000 tons has recently been established.

Town.—The town consists chiefly of two main streets, the Kaiserstrasse, forming an esplanade along the harbour, and the Barra Rasta, the principal business street, parallel to it. Behind the latter lies the native quarter and the bazaar ; in prolongation of the Kaiserstrasse to the E. runs the Wilhelmsufer, a broad avenue along the N. of the harbour ; near West Ferry point the



SKETCH PLAN OF DAR-ES-SALAAM

road turns N., under the name of Johannesstrasse, and follows the sea to the Msimbasi river, where it turns back and re-enters the town.

Population.—The town consists of about 330 coral-stone houses and 1,400 clay huts. Population about 25,000, of whom about 1,000 are white.

Streets.—The streets are broad, paved with coral, and kept in good condition, thus affording a marked contrast to the country roads in the immediate vicinity, which are a constant source of complaint.

Buildings.—The chief buildings are solid and roomy, and, except the churches, have two stories; they are as follows:

Post and telegraph offices.

Catholic and Evangelical churches.

Custom House and bonded stores.

The Old Fort (now head-quarters of the police).

Trading establishments of:

Hansing & Co., Hamburg merchants, general dealers.

Cassar, Prediger & Co., general merchants.

German E. Africa Co., general merchants.

Brettschneider & Halske, chemists and grocers.

The N.C.O.'s Club (formerly the Zur Krone hotel).

Along the Wilhelms Ufer are:

The Officers' Club.

The Clubs of the Senior Civil Officials.

The Casino, or joint Club of both the above classes.

The Officers' Mess.

Military Head-quarters and Barracks behind it.

Central Civil Government buildings.

Facing the sea are the residence of the Governor and the fine joint Civil and Military Hospital for white patients.

Behind Government House lie the botanical gardens, and scattered about these are a number of bungalows, occupied by civil officials.

A new hotel, the Kaiserhof, has been built, and is an improvement on any previously existing. It is thoroughly modern and well equipped, and can accommodate about 30 guests. It belongs to the Railway Administration.

In the town are some dirty and very indifferent inns, a brewery, and an iron and brass foundry.

Water-supply.—The water-supply is plentiful, but the wells in

the town are dangerous. In addition to the supply from these, an artesian well 90 ft. deep has been driven S. of the town. Water is pumped to water-lighters in the harbour by means of a 50-h.p. petroleum engine, and 4,000 tons were delivered to ships during the first six months that this supply was in operation. The supply is monopolized for the ships by the flotilla management. The town gets none of it. The river Msimbasi, to the N., is also available and never entirely fails.

Supplies.—The ordinary produce of the country and of Zanzibar is, under normal conditions, sufficiently plentiful in the market to supply the needs of the town, but no large stocks are kept, as Zanzibar is relied upon to supply the market.

Sheep and pigs can always be obtained locally in fair quantities.

Coal.—A stock of 4,000 tons of coal is maintained in the town. Supposed to be kept in white corrugated iron shed with flagstaff in front.

Native firms.—The following are the leading native firms for the provision of supplies at Dar-es-Salaam: their branch houses in Zanzibar are also given.

Dar-es-Salaam.

Meer Ali Moorjee & Co.
Jamal Walji.
Gali Jummea.

Zanzibar.

Ali Deena Wisram & Co.
Abdulla Sharif.
Dhala Kheraj.

H.H. the Aga Khan, G.C.S.I., is of paramount influence over the Indian traders, amongst whom it may be said that his word is law.

Money.—At Dar-es-Salaam the Indian rupee is accepted under protest; at other ports on the coast, except Tanga, it cannot as a rule be passed.

There are no banks in Dar-es-Salaam: Hansing & Co. and the German East African Company accept deposits as a favour, but issue no cheque-books. Money is drawn on a written or verbal message sent by the depositor.

The establishment of a bank at Dar-es-Salaam was decided on about 1914.

Workshops.—The Government workshops are under charge of the flotilla administration and are close to the harbour. In January 1904 they contained the following machine tools:

5 lathes (the largest will take work 11 ft. in length and 4 ft. 9 in. in diameter).

Iron and metal foundries, casting up to 19.7 cwt. and 9.8 cwt. respectively.

- 2 planing machines.
- 2 slotting machines.
- 5 boring machines.
- 3 ironplate shears.
- 2 plate-bending machines.
- 3 grinding machines.
- 1 steam-hammer of 660 lb. weight.
- 3 forges (these can work articles up to 2,000 lb. weight).

The Government workshops were able to deal with the large increase in the amount of repairs required, as they have recently been equipped with electric power and the following appliances :

- 1 machine for bending tubes.
- 1 plate roller.
- 1 platina stencil and cutter.
- 1 movable crane.

The Government workshops have been equipped with the following new appliances :

- 1 machine for bending hand-tubes.
- 1 " testing chains.
- 1 casting crucible furnace.
- 1 cupola furnace.

The two latter are both furnished with steam power.

An old locomotive at present supplies the power, and the following can at present be worked by steam :

- 1 lathe.
- 2 slotting machines.
- 1 boring machine.
- 2 planing machines.

Work is being done on the transmission system, and it is hoped that soon all the tools will be workable by steam. Hand power is used at present.

The workshops and docks can do all necessary repairs to hull and machinery. Skilled Europeans are in charge of every department.

A steam sawmill has been erected.

Telegraphs.—(a) *Wireless.* Since March 1913 Dar-es-Salaam has had a wireless station (for range see page 296) which puts it into communication with Guardafui, Delagoa Bay, Mwanza, and ships at sea.

(b) *Land telegraphs.* The following lines are working (see p. 296) :

- (1) Dar-es-Salaam, Bagamoyo, Saadani, Pangani, Tanga,
and thence (a) Mikindani,
(b) Mombo,
and thence (c) Amani, Wugiri, Wilhelmstal, Moshi.
- (2) Dar-es-Salaam, Mohoro, Kilwa Kivinje, Lindi, Mikindani.
- (3) Dar-es-Salaam, Morogoro, Kilosa, Mpapwa, Kilimatinde,
Tabora, and Mwanza.

Telephones.—(a) *Internal*—Telephonic communication is established nearly everywhere ; the exchange is at the Post Office.

(b) *External* communication with Tanga and Kilwa Kivinje over the telegraphic wires.

Bicycles are in use in the town, and are largely used throughout the country by Europeans, Indians, and well-to-do Swahili. They take the place of horses, which it is almost impossible to keep.

Newspaper.—A newspaper, the *Deutsch-ostafrikanische Zeitung*, is published weekly.

Sanitary and medical notes.—The town and bazaar are kept remarkably clean, chiefly by the labour of chain-gangs of native prisoners.

The sun is dangerous throughout the year at Dar-es-Salaam, as at other towns along the coast, and tropical head-covering, or an umbrella, is essential during the daytime. Cases of sunstroke amongst Europeans have been frequent when at times the cool sea-breeze has led to a neglect of precautions.

Hospitals.—The general hospital for military and civilian Europeans is a lofty, well-ventilated building of the most modern type, with broad outer verandahs.

It consists of a main block, the southern portion of which is solely devoted to fever patients ; in this portion the door and window spaces are filled with mosquito-proof wire-netting. The absence of dust renders this arrangement feasible.

All nursing is done by nursing sisters paid by the Government. Of these, nine are employed, of whom three are always on leave in Europe.

Apart from blackwater fever, which principally affects Europeans who have been travelling in the interior, there is very little sickness among the white population of the town.

The medical staff of the hospital consists of a staff-surgeon, an assistant medical officer (captain), and about six civilian compounders, ward masters, &c.

A separate medical officer is in charge of bacteriological

research at the hospital. This officer makes examination of the blood of new arrivals, and of that of those who have suffered from fever, and, should the fever bacillus be discovered, orders the patient into hospital.

The hospital now contains only 50 beds, but there exists a considerable reserve of bedsteads, linen, &c., and in event of emergency or epidemic, 100 to 120 men could be accommodated.

Water for hospital.—A plentiful supply of good water is pumped up by an aeromotor from a well in the hospital grounds.

Ice.—Ice is supplied by a local company, under British-Indian management, at $1\frac{1}{2}$ annas per English lb.

Native hospital.—The native hospital contains about 50 beds, and the medical attendance is furnished by a medical missionary from the Protestant mission.

It takes in surgical cases chiefly, as the sick native prefers to be treated by a native 'hakim'. The native troops are, however, treated at this hospital.

Both the missions and Messrs. Brettschneider have dispensaries.

Garrison.—Of the 14 companies of native troops under white officers which compose the military forces of the Protectorate, the 10th Company is stationed at Dar-es-Salaam. The total number available is as follows :

10th Company	.	.	.	.	.	162
Recruiting dépôt	.	.	.	.	.	154
Signalling Company	.	.	.	.	.	30
Band	.	.	.	.	.	20
White officers (about)	..	.	.	.	.	40
Total						406

(2 companies in the Barracks with 4-5 European N.C.O.'s, according to report dated 8/11/15.)

Equipment :

The men were armed in 1912 with the German military rifle M. 71.

It was expected that they would soon have the lengthened carbine 98.

The artillery dépôt contains over 60 guns.

The 10th Company (like every other Company) has 3 machine-guns.

Heliographic communications are kept up over 888 miles.

A pigeon post has been tried, but without success.

12 aluminium boats for transport, and experiments are being made with collapsible boats.

Pay : Native soldiers are paid—

Privates, 20–30 rs. per month.

N.C.O.'s, up to 150 rs. per month.

Barracks.—The native barracks consist of a square enclosure surrounded by a high stone wall, along which are the men's huts. The wives and families of native officers and sergeants live in barracks, as well as those of some of the married soldiers. The building is 110 yards square. Only entrance on S. side, where wall sinks from 2 stories to 8 ft. Small barred windows only, 10–14 ft. up. Gate guarded by building to E. Barracks face sea across churchyard and open space.

Magazine.—The magazine is on the E. side of the harbour, at the point shown as 'powder shed' on map.

Military stores.—In the military stores, near the Custom House, is kept a plentiful supply of accoutrements and clothing, which is renewed every year. The whole force, Europeans and natives, can be supplied with a new outfit at a moment's notice, if required.

The head-quarters of the German East African troops is at a small station a few miles from Dar-es-Salaam. Garrison : 10,000 white and black troops ; 50,000 carriers.

Police quarters.—Supposed to be on Kurazini : buildings forming 3 sides of square. 1 machine-gun here, and some native soldiers from outside German East Africa have been instructed in it.

Mules.—30–40 kept at N.C.O. quarters for use of troops.

Defences.

(1) Supposed 'battery', more than one 6-in. gun.

(2) Saluting battery, four 12-pounders.

No earthwork fortifications for guns.

Dar-es-Salaam was bombarded by H.M.S. *Fox* and *Goliath*, December 15, 1914, and enemy ships sunk.

Defensible Points.

In Dar-es-Salaam District, missions are as follows : Dar-es-Salaam, Catholic and Protestant ; Kurazini Catholic mission ; Maneromango and Kiserawe, Protestant ; Pugu, Catholic. The missions are all built of stone and easily capable of defence. Plantations : Soga, Kifulu, Neu-Branitz, Mpiyi, Aulepp-Shamba, Friedrichstal Pugu, with easily defensible stone houses. Of the railway stations, Pugu, Soga, Mpiyi, and Ruvu are defensible, well-built stone houses.

VII.—RUFJI DISTRICT

Utete is the head-quarters. Situated above the delta.

Mohoro is the old head-quarters of the Rufji District. The town is situated on the Mohoro river on the southern branch of the delta, about 8 miles from the mouth. The river is navigable thus far for dhows at all times, and for the small Government steamers during the spring floods.

Mohoro has a population of 900, among whom are a few Germans, and about 100 Indians and Arabs. It has a good trade, and the soil is suitable for tobacco-cultivation. Steps are being taken to develop the valuable forests in the delta for commercial purposes.

Mohoro is in direct telegraphic communication with Dar-es-Salaam, Lindi, Kilwa Kivinje, and Mikindani.

Defensible points.—The plantation of Kingwagwanda on the Bume river, and the Rufji plantation at Logeloge have each a large corrugated iron house. The Schubertshof plantation has a corrugated iron dwelling-house and a corrugated iron machine-shop; at Tindwa there is a stone building capable of defence.

Mafia is the only island of any size along the coast under German protection. It is a coral island, very flat, the highest point not exceeding 75 ft. There are several freshwater lakes and streams in the island, which contain water all the year through. It is all under cultivation; Indian corn, sweet potatoes, &c. are grown, and cattle-raising carried on with success. There are some 4,000 head on the island, and it supplies slaughter beasts for the mainland south of Dar-es-Salaam.

The largest settlement is on the little island of Chole, SE. of Mafia.

The total population of the Mafia group is about 9,500, of whom three are Germans and about 420 Indians and Arabs.

On the E. side of the island are the remains of an old fort built by the Portuguese, some centuries ago.

The island is divided into two portions by a depression from Chole Bay to the N. coast. This depression is swampy and full of lakes, with thick tropical vegetation. N. and S. of this is a slightly undulating country, of which the southern part consists wholly of sandy loam, covered with bush, with occasional clearings with pasture of short thick grass. Between Daweni and Magemani there is a level surface of sand not very high above the sea, covered with growth about 12 or 15 ft. high. N. of the swamp belt the island is divided into two regions. On the W. side the land is of the same sandy character with bush as in the S.; on the E. side there is a narrow rocky coral belt, without soil, owing to the strong winds;

but in clefts and sheltered spots there is soil in which very thick shrub grows.

Mango plantations are dotted all over the island; there are patches of the red earth which is the chief soil at Zanzibar.

Coast.—W. coast: Ras Mkumbi to Ras Bweni rocky; then come mangrove belts and sandbanks with lofty trees intersected by shallow canals. The land shelves gently towards the sea. At Mfungani the cliffs come close to the sea and this continues to Tireni; then there is a sandy mangrove belt to Kisimani Mafia.

S. coast: red cliffs with a belt of mangrove.

E. coast: from Ras Utende northwards (round the Chole Bay) the shore is everywhere flat and sandy. N. of Chole Bay the coast is of coral and rocky, and the sea is encroaching rapidly.

The mainland opposite is the delta of the Rufiji, full of swamps and thick vegetation.

Tides in Chole Bay. Springs rise 15 ft., neaps 10 ft.

The *winds* are strong, and the sea breaks heavily along the E. coast.

VIII.—KILWA DISTRICT

Kilwa Kivinje, the head-quarters of the Kilwa District, is 154 miles south of Dar-es-Salaam. It consists of a labyrinth of native huts, with a few stores and a large square stone fort of two stories. There is a roomy custom-house store about 50 yards in length.

In the days when Arab influence was paramount on the coast, Kilwa Kivinje was the principal port of export for slaves and ivory; it is now of less importance. 4,500 inhabitants.

This town is usually referred to as 'Kilwa'.

Telegraph and Telephone.—Kilwa is directly connected with Dar-es-Salaam, Mohoro, Lindi, and Mikindani by telegraph; and there is telephonic communication over the telegraph wires with Dar-es-Salaam, and thence with Tanga.

Harbour.—The anchorage is open and subject to a heavy swell during the monsoon. Ships lie about a mile out; cargo is transhipped into small boats and is carried by porters through the shallow water.

Water and Supplies.—The town is amply supplied with wells, but the water is bad. An aqueduct was in course of construction a few years ago, but it is not known to what extent it has been completed.

Live stock is abundant, but vegetables are not easily procured.

A large trade in rubber is done here.

A railway to Wiedhafen on Lake Nyasa is projected.

Kilwa Kisiwani is 15 miles south of Kilwa Kivinje; from both of these places a large quantity of rubber is exported. There is an excellent harbour for steamers of all sorts, but no town at the present time. On the island which covers the entrance to the harbour is a village of about 500 inhabitants, of whom 50 are Arabs and Indians. This is the oldest settlement known to history on the East African coast, and there are architectural remains of three periods of its history still to be found: the old Arabian and Persian period from 987–1498, the Portuguese 1498–1698, and the later Arabian 1698–1826. Most of the ruins date from this later period. On the north-east shore of the island is an old Arabian fort, with towers at the angles and crenelated walls. The place has a bad reputation for malaria.

This is the best natural harbour in German East Africa, the largest steamers being able to enter at all states of the tide. Proposals have been made since 1912 to make it a naval base. This plan would include the mounting of guns both here and at Tanga, to protect the railway terminus.

Defensible Points.

Besides the *bomas* (town headquarters) at Kilwa, Kibata, and Liwale, *points d'appui* in the district are as follows: (i) the strong stone house on the open, turf-covered hill in the plantation of the Kilwa Kisiwani Syndicate on the Linganra (about 5 hours to the SW. of Kilwa); (ii) the stone house of the plantation at Samanga Ndumbo (here the roads from Kilwa to Mohoro and from Samanga to Kibata intersect).

IX.—LINDI DISTRICT

Lindi is about 70 miles S. of Kilwa Kisiwani. It is the headquarters of the southern district of the Protectorate. The town lies on the northern shore of the bay into which the Lukuledi river flows.

The surrounding hills rise to a height of about 1,000 ft.

Port.—The custom-house and German East Africa Company's store are close to the fort, and near the latter is a small pier suitable for boats.

All supplies are scarce; water is plentiful, but brackish.

The largest ships can come in at most times, and Lindi is looked on as likely to become the chief port in the south of the Protectorate.

It is the seaport for Lake Nyasa, but at present is unable to

compete with the British trade route *via* the Shire and Chinde. 4,500 inhabitants. 3,500 in 1908 (Meyer).

Telegraph.—Lindi is in direct telegraphic communication with Dar-es-Salaam, Mohoro, Kilwa Kivinje, and Mikindani.

Garrison.—There are said to be about 350 white troops at Lindi.

Close to the shore is a large rectangular stone fort, which also serves as prison and police barracks, and contains the civil and military offices.

N. of the fort lie the barracks, close by which is the observation spot. Lat. $9^{\circ} 59' 26''$ S., long. $39^{\circ} 43' 38''$.

The entrance to Lindi bay is reported mined.

Mikindani is 40 miles SE. of Lindi; though an unimportant place, it possesses a splendid harbour, with good anchorage and nearly land-locked.

Very few supplies are obtainable, and the water is bad. 1,500 inhabitants.

Mikindani is in direct telegraphic communication with Dar-es-Salaam, Lindi, Mohoro, and Kilwa Kivinje.

Defensible Points.

Benedictine mission at Namupa, Lukuledi, and Ndanda. Lukuledi and Ndanda: defensible stone houses.

English mission at Masasi. Defensible stone house.

Plantations: Mkoe lake, Kikwetu, Mitvero, Noto Mroweka, Mtua, Mtama. The first four N. of Lindi, the others in the Lukuledi valley SW. of Lindi.

Noto still in process of being laid out in 1911. The others had then defensible stone houses. The plantations Lichweichwa, Kiduni, Mayani, Neitivi, on the S. coast, have unenclosed stone houses easily defensible. Plantations of Pemba, Mwita, Mtwara, Neuluisewahl, Msimbati, Kilindi, near Mikindani; Pemba was being laid out in 1911. The others had already defensible stone houses.

X.—SONGEA DISTRICT

Songea, the head-quarters, lies between Lindi and Lake Nyasa, an important caravan route. The climate is good. 80 police normally stationed there. 6 days' caravan march, and 3 by courier, from Wiedhafen.

Defensible points would be the following missions: Peramiho, Kigonsera, Milow, Yakabi.

XI.—LANGENBURG DISTRICT

Langenburg lies on the southern shore of Rumbira Bay near the N. end of Lake Nyasa. The shores of the bay are precipitous. Inside the fort is a big two-storied building, containing eleven living-rooms and three storehouses, roofed with corrugated iron. There is also a building 25 yards long in which are two 'lock-ups,' the armoury, and guard-room. The whole is closed in with a loop-holed stone wall, $7\frac{1}{2}$ ft. high. The place could be made very strong against approach by water. Langenburg is the station of the Government steamer *Hermann von Wissmann* (50 tons, cabin accommodation for 7 passengers). The *Queen Victoria* of the African Lakes Corporation also calls here. Europeans stationed here suffer much from fever. The white population numbers about 100.

New Langenburg is about 30 miles NW. of the N. end of Lake Nyasa; it is a town of very recent growth, and promises to be important on account of the coal in the vicinity.

New Langenburg is now the head-quarters of one Company of Infantry with fort. New Langenburg would probably be the *point d'appui* of any German force operating in Northern Nyasaland. It is about three days' journey from Karonga (British) and two from Mwaya.

Mwaya, situated about the extreme N. end of Lake Nyasa, has probably no defences and could be shelled from the anchorage. The shore is low and flat; the landing is not good. The anchorage is open to southerly gales. The settlement is purely commercial.

Defensible Points.

Points d'appui are the Missions at Neu-Wangemannshöhe, Kyimbila, Rungwe, Magoye, Mwakereri, Mkulwe, and Galula. Hassoko, Old Langenburg, Mwakeli, Itaka are also capable of defence.

Wiedhafen, on Lake Nyasa, is connected with Langenburg by the SS. *Hermann von Wissmann*. The Berlin Mission also has a small steamer on the lake, called the *Paulus*.

From Mwaya to Wiedhafen (also called Amelia Bay) there is no road, the shore of the lake being precipitous and the mountains inland from the latter being impassable. From Wiedhafen southwards, via the German-Portuguese boundary, Malo Point, Intengula, Fort Maguire and Fort Johnston, troops could be moved along the shore of the lake almost throughout the entire distance.

Sphinx Haven and Papya Islands are stations for the SS. *Wissmann*

—slipway, stores, fuel, &c.—opposite Ruarwe (British) on the western shore. There are no defences.

Mbampa Bay is a fuel station for the SS. *Wisemann*.

XII.—BISMARCKBURG DISTRICT

Bismarckburg is the head-quarters of the District formerly known as Ukonongo. It lies above Kasanga bay, at a height of 150 ft. above the level of the lake. A temporary station has been built on the hill-side. The permanent station and fort are to be built on a commanding hill to the south of the bay.

A brick steamboat station has been built on the shore of the lake.

Connected by telegraph with Ujiji and with the South African system.

Defensible Points.

Some of the Missions on the lake must be taken into account as *points d'appui*, viz. Kala, Kirando, Utinda, Karema.

XIII.—UJJI DISTRICT

Ujiji, the head-quarters of the province of that name, consists of three villages—Ugowe, Mtale, and Kasimbo. The two former lie in a valley 600 yards from the shore of Lake Tanganyika, and the latter on a plateau 150 ft. above the water level and about one mile from the shore. The lake here forms a wide, open bay, the shores of which are flat and sandy. It is bounded to the S. by a flat marshy tongue of land, and to the N. by the barren rocky cape known as Ras Pangwe, behind which is a harbour and anchorage for vessels.

The station, buildings, and fort are situated on the plateau to the N. of Kasimbo. Population 14,000.

The following description of Ujiji is given by Mr. J. E. S. Moore, F.R.G.S., who visited it in 1900 :

‘Ujiji is the one place in the whole of the African interior which can be called a town. . . . The country about Ujiji, and especially to the N. of it, is good, agriculturally speaking, producing quantities of mangoes, oil palms, and grain. The soil is deep and well watered . . . the country is open and grassy and affords pasturage for huge herds of cattle with enormous horns. . . . Owing to the fall in the lake it has become impossible for a boat drawing more than 3 ft. of water to lie in what used to be the old harbour of Ujiji immediately to the S., while the roadstead opposite the town is anything but safe, as it lies completely open to the full sweep of the lake.

Steamers have to lie at some distance from the shore, and discharge their cargoes by lighters.

'There is, however, a beautiful little harbour, about ten miles to the N., known as Kigoma, which is in reality the best harbour on Tanganyika. The *Hedwig von Wissmann* lies here. It has, however, in conformity with the whole of the northern third of the lake, one drawback—wood is extremely difficult to obtain. . . . Ujiji itself is an unhealthy place and nothing can be done to improve it much. It is situated among coast swamps and river deltas, which the fall in the lake has rendered more undesirable than they were. A great deal of the wind at Ujiji comes from the S. and E., so that one gets the full benefit of the steaming swamps at the mouth of the Mlagarasi river, some thirty miles to the south; and last, but not least, the whole place is saturated with the accumulated filth of centuries of Arab occupation.' A good deal of smuggling goes on between Ujiji and the Congo State.

Ujiji is the terminus of the Cecil Rhodes Transcontinental Telegraph (1909).

The post of Kosulo was in course of construction in 1911.

The Gottorp saltworks are not defensible.

Kigoma. Terminus of the Tanganyika railway. Steamer-station used by the *Hedwig von Wissmann*. Suitable for a port, and will probably supersede Ujiji. A hotel lately built. There are workshops here, and a patent electric slipway, capable of launching a vessel 230 ft. long.

XIV.—TABORA DISTRICT

Tabora is the largest, and perhaps most important, of the inland towns. It has a population of 40,000, of whom 75 were Europeans and 30 Arabs and Indians in 1907.

The town lies (at a height of more than 1,200 metres above sea-level) in a valley, facing S., and is divided into three separate parts:

Sokoni is the largest, and is a seat of the Commissioner. The market is also here, and the bigger traders, and it is the halting-place for caravans.

Ugambo is about a mile distant, and is connected by a broad causeway bordered with mango-trees.

Kihara, the third part, is a further 3 miles distant. Gold has been discovered in workable quantities in the Tabora district.

The rainy season lasts from November till May, and the remaining months are dry.

During the rainy season the ground water is very close to the

surface and the lower lying ground is partly under water. In the dry season there was a great lack of water. This has been remedied by the use of pumps. Tabora is a rather unhealthy station.

Seven broad roads lead from Tabora in different directions: two to Mwanza, two to Kilimatinde, one to Ujiji, one to Urambo, and one to the S.

Tabora has a well-built stone fort, and is the strongest military station in the Unyamwezi district. Some of the Greek and Arab merchants have good stone houses.

Tabora lies in the midst of the fertile and densely populated district of Unyanyambe, the richest portion of the Unyamwezi table-land, which is well watered by the numerous head-streams of the Mlagarasi. It is a point of strategical importance at the junction of the routes converging here from the coast, Nyanza and Tanganyika, a fact emphasized by the construction of a massive modern fort, which dominates the neighbourhood.

Defensible Points.

Other *points d'appui* besides Tabora station are the Catholic Missions of the 'White Fathers' in Ndala, Ulugwa, and Ushirombo. They are built in the *Tembe* style, with enclosure walls.

XV.—DODOMA DISTRICT

Dodoma is now the head-quarters of the District.

Mpapwa is the point where the most important caravan routes leading from the lake district to the coast meet. It lies at a height of 3,380 ft. above the sea-level, on the right bank of a small stream, which is dry except in the rainy season. To the N. rises a range of hills, the slopes of which are covered with massive rocks. To the SE. the country gradually slopes down to a great open plain. The climate is fairly healthy. The average temperature is about 72·5° F. The rainy season lasts from the beginning of December till the end of April. There is a good supply of water obtainable from the stream and from a spring in the garden to the N. of the fort.

The fort is enclosed by a rectangular stone wall, 13 ft. high, flanked by two bastions, of which one is in the form of a round tower. Within the fort are the officers' and non-commissioned officers' quarters, stores, &c., all stone buildings and roofed with corrugated iron.

Outside the fort are the huts of the garrison, a hospital to accommodate 12 men, stores, workshops, &c.

The station is an important halting-place for troops marching, and for caravans.

Big game abounds in the neighbourhood.

For caravans it is about 18 days' march from Bagamoyo and the same from Dar-es-Salaam. The post takes half that time.

Mpapwa was at one time a district head-quarters.

Kilimatinde is distant 360 miles from Dar-es-Salaam. It is an important military station. The fort consists of a square of some 1,660 square yards, enclosed by walls $6\frac{1}{2}$ ft. high, flanked by bastions at opposite angles.

Two two-storied buildings have been erected against the walls, the lower stories of which serve as stores, offices, &c., and the upper stories as officers' quarters. On the W. side is a building serving as quarters for non-commissioned officers, and store rooms. On the E. side, also clear of the fort, is a building containing the officers' mess, guard room, stores, and additional officers' quarters. To the N. of the fort is the hospital, which occupies the buildings which were erected when the station was first started. It is not a healthy station. The garrison suffers a great deal from malaria. Gold has been found in workable quantities in this district.

Post and Telegraph station.

XVI.—KONDOA IRANGI

Kondoa Irangi, the head-quarters, is an agricultural centre and military station on the slopes of Mount Gumi.

Singida. Normally 1 European officer, 1 European N.C.O., and 25 men. Strongly built fort on small hill. Officer in charge doing civil work. Climate healthy.

Mkalama. Normally 1 European officer, 2 European N.C.O.'s, and about 100 men. Strongly fortified stone fort on top of hill. 2 maxims. 7 Indian stores. Climate healthy.

XVII.—MOSHI DISTRICT

Moshi is situated on the southern slopes of Kilimanjaro. It is distant about 190 miles from Tanga, and seven days' march (about 75 miles) from Voi, the station on the Uganda railway. It has a population of about 6,000, 800 of whom (including a colony of Boers) are white men. The surrounding country is dry, but fertile, the streams which water it flowing in deep gullies, from which they are conducted through channels for the watering of the crops. The station is about 4,800 ft. above the sea, and the climate is very

healthy for Europeans. The temperature in November and December, March, April, and May, is about the same as in summer in Northern Europe. The hottest time is from the end of December till the end of February. The nights are always cool. It is free from mosquito and tsetse.

The fort consists of a four-sided stone and clay wall, 10 ft. high and 1 ft. 6 in. thick. Within, at the SE. and NW. angles, are the officers' houses, two-storied buildings. The ground floors form the stores for ammunition, &c. The lower story is of stone, but the upper story, owing to the liability to earthquakes, of timber work and plaster. Verandahs, 12 ft. wide, surround the building. At the SE. angle is a bastion commanding the adjoining valley. The fort has 2 guns. The ordinary garrison consists of 1 Company of Protectorate troops.

Just to the W. of the fort is a substantial two-storied building for the accommodation of the non-commissioned officers. The privates and their wives live in a street of huts outside the fort.

New Moshi is about 6 miles SE. of Moshi, and is a station on the Tanga-Usambara railway. A modern hotel is nearing completion. There are 20-30 Europeans, mostly employed on the railway. Will probably take the place of Moshi, and the officials from Moshi are believed to be about to make New Moshi their headquarters. There are a number of German settlers engaged in the rubber and sisal plantations.

Defensible Points.

Various farm-houses could be defended; also the Rombo Mission on Mount Kilimanjaro.

Moshi is connected by telegraph with Mombo (137½ miles) and Arusha (43¾ miles).

XVIII.—ARUSHA DISTRICT

Arusha is the head-quarters—a military post. There is a missionary station.

Various farm-houses and mission buildings are defensible, especially Leganga (Leudorf) and the Nkoaranga mission on Mt. Meru.

XIX.—MWANZA DISTRICT

Mwanza lies on the eastern shore of Smith Sound, on Victoria Nyanza. From the shore of the latter a broad road lined with eucalyptus leads to the fort. Mwanza is the head-quarters of the 11th Company of Protectorate troops. The fort is four-sided and consists of an earthen parapet, enclosing one principal brick building and several smaller houses of brick and stone. It is the head-quarters of the District. The population is about 3,000. Most of the trade is carried in British steamers, viz. the *Sybil* and *Winifred* (600 tons, twin-screw) or the *Clement Hill* (750 tons, twin-screw), which connect Mwanza, Shirati, and Bukoba with the English ports on the lake several times a month. In 1907 a German company was formed to run a number of 10-ton steamers along the coast, where the big steamers cannot go.

From 1911 Mwanza was connected with Bukoba by wireless telegraphy. Its station had a range of about 560 miles. From 1913 this station was in connexion with the new wireless station at Dar-es-Salaam.

Mwanza, however, was reported to have been destroyed by the British in June 1915, and the wireless telegraph tower blown up (see p. 296). In July the steamer *Mwanza* was also destroyed.

Shirati lies on the east shore of Lake Victoria Nyanza, close to the British frontier. The fort is built of stone and clay, and has four bastions. Inside the fort are two houses and a two-storied tower.

To the N. and S. of the fort are the villages of the soldiers and the natives. The houses in the former are built of stone, the latter are the usual native wood and grass huts. The climate is healthy.

There is a concentration camp for sufferers from sleeping-sickness. Normally there are 1 European civil administrator and 25 police; 1 maxim.

Ikoma. Normally 1 officer, 25 men. Strongly fortified stone fort on top of hill. Officer doing civil work. Horses and mules will not live here on account of tsetse.

Defensible Points.

Further *points d'appui* could be furnished in case of need by the missions Bukumbi, Nasa, and on Ukerewe Island.

XX. IRINGA (MILITARY DISTRICT)

New Iringa, a military post, has a population of about 2,500. Iringa is situated about 150 miles SW. of Kilosa, on top of a hill with fort holding commanding position. Fort is a two-storied stone building with a rectangular wall round it, and officers' and N.C.O.'s quarters inside. Normally 3 officers, paymaster, and 2 European N.C.O.'s—the commandant doing the civil work. Telegraph and telephone communications to Kilosa and all stations. 2 maxims and a light field gun. Helio communication with Mahenge. 8 Indian stores and 1 store kept by a Greek. About 5 German settlers engaged in farming at foot of hill. Climate healthy.

Defensible Points.

There are various mission stations in the district, with large, solid groups of buildings; but, with the exception of Tosamaganga, they are not surrounded with defensible enclosures. Occupied in 1911 by 25 missionaries (Catholic and Protestant).

XXI. MAHENGE (MILITARY DISTRICT)

Mahenge is normally the post of the 12th Company; while there is a detachment at Mponda. Heliograph communication between Mahenge and Iringa.

At Kwiro are defensible mission-buildings—strong stone houses, not enclosed.

In Kiberege (formerly a military post) is a building thatched with grass, surrounded by a fence of growing timber.

XXII. BUKOBA (RESIDENCY)

Bukoba, district head-quarters, is situated on the western shore of Victoria Nyanza, on the left bank of the Kanoni stream, on low-lying ground. Behind this the slopes rise to the plateau some 900 ft. above it. At the station the Kanoni stream has a depth of 10 to 12 ft. In the neighbourhood is marshy land, which is gradually being drained. The district as a whole is fruitful and well populated. The inhabitants live mainly on bananas, and keep goats. The principal exports are skins and coffee, the latter being very successfully cultivated by the natives.

The climate is healthy. The temperature does not rise above 82° F., and in the early morning falls to 46° F.

Bukoba was destroyed by the British on June 2, 1915 ; the following description, however, is retained :

A fort was built in 1901, and is garrisoned by the 7th Company of Protectorate troops. The fort is a square with sides of 65 yards, the walls are 10 ft. high, and there are massive bastions at the E. and W. angles. The Europeans dwell inside the fort. The buildings are all of brick, roofed as a rule with thatch. In front of the N. entrance is a small drill ground. To the N. of the drill ground are the hospital and the workshops.

About 10 minutes' walk from the fort at the southern end of Bukoba bay is a landing-place and anchorage, with about 10 ft. of water. Bad anchorage. Landing alongside jetty available for boats drawing up to 5-6 ft. of water. Additional protection for boats has been provided by a mole, 200 yards long, at the end of which is a boat-house. There are several European business houses, including 1 American and 1 Italian. The chief imports are cotton goods from India, Holland, and America, beads, wire, metal utensils, and old clothes.

Bukoba had a wireless station (destroyed by British) with a radius of about 125 miles, which brings it into communication with Mwanza (also destroyed).

Normally 1 company infantry.

The fort is commanded from a hill to the S. at a range of 800 yards, and is not intended to resist attack by Europeans. No guns in fort, but machine-guns are known to exist. Fort lies 50 yards from lake shore.

Defensible Points.

Six mission stations, solid stone buildings, but unfortified :— (1) Marienberg, 2½ hours N. of Bukoba, (2) Buanjai, W. of Bukoba, (3) Kagondo, (4) Ragia, S. of Bukoba, (5) Katoke, near Usui, (6) Friedberg in Uzambyi. There are strong houses on the plantations of Maruku, Kaboya, and Katoke (2 hours, 6 hours, and 8 hours respectively S. of Bukoba). There are sleeping-sickness camps in Kigarama and Kishanyu.

XXIII. RUANDA (RESIDENCY)

Kigali is the head-quarters.

The mission in Kabgaye (Marangara) was considered a possible *point d'appui*.

Kisenyi, a border station on the N. of Lake Kivu, is well laid out, with good houses, and will probably become a great trade-centre.

XXIV. URUNDI (RESIDENCY)

Gitega is the new head-quarters. No details are available.

Uzumbura, the old head-quarters, on the N. end of Tanganyika, divides with Ujiji in the middle and Bismarckburg in the S. the trade of the lake. The steamer *Hedwig von Wissmann* serves these places. The country is well populated and fertile. There are many Arab traders. The people are contented, hardworking, and practise agriculture, fishing, and weaving. But the climate is very bad, on account of the swampy, though fertile, lands uncovered by the constant retirement of the lake.

Military.—A rifle club of 100 members in 12 groups (each in a certain district) has been formed. The groups meet for united exercise once a year.

Defensible Points.

The buildings of the 5 missions in Urundi (Buhonga, Mugeru, Muyaga, Kaninya, Rugali) are solidly built throughout and defensible.

CHAPTER VII

MILITARY FORCES

Estimated military forces in 1915—Protectorate Force (*Schutztruppe*) before the present war—Distribution of troops and police before the present war: Tribes likely to serve as irregulars—German warfare against natives.

PART I

ESTIMATED MILITARY FORCES IN 1915

In July and September 1915 the German forces in the Protectorate were estimated to comprise :—

European troops, about 2,200.

Native regular troops, about 11,100.

Native irregulars, perhaps about 3,000.

The number of native troops has been increased, and some cargoes of rifles and ammunition landed, since that date :—

Guns of various calibres.

Machine-guns.

European Troops.—Before the outbreak of the present war there were no purely European troops in the country. The German authorities have now armed and organized all available Germans and Austrians in the Protectorate. Most of those were reservists or reserve-officers of the German army, and a compact force has therefore been formed with its own cadres of officers, non-commissioned officers, and men. To the troops raised from German settlers and residents in the Protectorate must be added seamen, marines, and naval guns from the light cruiser *Königsberg*.

Owing to the lack of horses, due partly to the prevalence of tsetse and horse-sickness, it is impossible to form in the Protectorate any considerable body of cavalry. (The number of horses owned in the country in 1912 was 176 ; it must be remembered that this was a considerable increase on 1910, when there were only about 40. It is therefore probable that there has been a similar increase in the years since 1912.)

Native Regular Troops (Askari).—The number of the native

regular troops as given in September, 1915, has possibly been made up in some such way as the following :

Protectorate Troops (native N.C.O.'s and men) who were with the colours at the outbreak of the present war.	2,472
The former Police, who before the present war had received a military training and were armed with rifles	2,140
The former permanent carriers attached to the companies of the Protectorate Force. They had received some military training.	600 ?
Discharged native soldiers and police living in the Protectorate at the time of the outbreak of war, and since called up for service	2,000 ? ¹
Recruits (including a few hundred 'Askari boys' who had some experience of the details of service in the Protectorate Force)	3,888 ?
	<hr/> 11,100

How far the Germans have been able since September 1915 to strengthen their native regular force, would depend mainly on the increase of their supply of rifles and ammunition. It is reported that they have been training large numbers of natives in the hope that it might become possible to arm them with rifles obtained from outside the Protectorate.

(An estimate of June 1915 gave the number of native regular companies as 24, each with 12-16 Europeans. An estimate of July 1915, about four weeks later, gave the number of native regular soldiers then trained as 8,650. If these reports be correct, the strength of a company of Askari in June 1915 would apparently be 250-350 men.)

The native regular troops are armed partly at least with the rifle M 71 (1888 pattern ?), and perhaps also to some extent with the lengthened carbine 98. Other types of rifles are probably also in use. On the recruitment, training, and equipment of the Protectorate force before the present war, see Parts II and IV of this chapter.

Native Irregulars (Hilfskrieger).—The Germans have raised some thousands of irregulars for reconnaissance, scouting, &c. In

¹ It must be remembered that the numbers of the Protectorate Troops and Police have increased considerably in recent years. The German Colonial Estimates for 1905-6 give 1,591 as the number of the native N.C.O.'s and men in the Protectorate Force, and 610 as the number of native police. The period of service in the Protectorate Force (nominally five years) has been prolonged as much as possible in individual cases (see p. 202), and probably a considerable (though of recent years decreasing) number of men recruited from other parts of Africa have not settled in the Protectorate after their discharge. In 1911 the German military authorities noted the existence of about 940 discharged native soldiers settled in the country, besides a number who were itinerant traders, &c., as in the District of Dar-es-Salaam.

September 1914 the German troops who invaded Belgian Kivu were preceded by a large number of Watusi (see pp. 108-9) armed with rifles. The tribes considered by the Germans to supply the best irregulars are in general those from which recruits for the Protectorate force have been mostly drawn in recent years (see pp. 201-2), and besides these the Masai (see pp. 86-7), a warlike people inhabiting the great Masai steppe in the northern part of the Protectorate. It has been unofficially reported that the Arabs in the Protectorate have willingly entered the German service. On the capacity of native tribes to supply irregulars see further Part III of this chapter and the tabulated information on pp. 28-113. For the duties of irregulars in German warfare against the natives see p. 223.

Artillery.—The number of guns in German East Africa has been variously estimated. Besides guns from the light cruiser *Königsberg*, artillery has been conveyed into the Protectorate in various ways since the beginning of the war. Guns of the following calibres were reported to be in the Protectorate towards the end of 1915 :

11 cm. (4.33 inch), light field howitzers.

88 mm. (3.46 inch), field guns.

87 mm. (3.42 inch), guns described as firing shells and shrapnel with an effective range of 4,375-4,920 yards, and a rapidity of fire of 8-10 shots a minute.

75 mm. (2.95 inch), mountain guns.

70 mm. (2.75 inch), mountain guns.

60 mm. (2.36 inch), mountain guns.

37 mm. (1.48 inch). The following guns of this calibre are reported :

(i) During operations against the Belgians on Tanganyika and Kivu, the Germans used quick-firing Hotchkiss of 37 mm., and 'howitzers of the same calibre': but there may be a confusion between these two kinds of artillery. (ii) Nine 37 mm. machine-guns and three 37 mm. revolver-guns, all old, were landed at Tanga in the autumn of 1915.

Machine-guns: apparently between 90 and 110 towards the end of 1915.

A 10-inch gun is said to have been mounted on the coast near Saadani towards the end of 1915, but this is very doubtful.

The armament of the *Königsberg* :

Ten 4.1 inch guns.

Eight 3-pounders.

Four machine-guns.

It has been reported that 10 guns have been constructed in the Protectorate to liberate poisonous gases.

Aircraft.—There are said to be no aeroplanes in the Protectorate.

The only aircraft definitely reported by the end of 1915 was a military balloon sighted over Taveta.

For craft on Lakes and Rivers see pp. 282 *seqq.* The Germans have armed steamers and dhows, a number of which had already been sunk by the end of 1915.

PART II

THE PROTECTORATE FORCE (*Schutztruppe*) BEFORE THE PRESENT WAR

Before the present war there were 260 Europeans attached to the Protectorate Force. These included officers, non-commissioned officers, surgeons, N.C.O.'s of the Medical Corps, paymasters, and clerks. The officers, apart from the Major commanding the Force, were Captains, 1st Lieutenants, and Lieutenants. Besides these there were 67 Europeans (including 3 officers and 49 N.C.O.'s) attached to the Police.

The selection of Europeans for service in the Protectorate Force was based on a careful inquiry into their qualifications. Officers must have served at least three years in the Army, and they were required to have an excellent record, and to be favourably reported on by their Corps Commanders for good character, judgement, coolness, decision, energy, capacity for command, initiative, &c. They must have received a thorough military education. Surgeons and non-commissioned officers had to possess analogous qualifications; N.C.O.'s must have served altogether at least 3 years, and 1 year as a non-commissioned officer.

Candidates were subjected to a very rigorous medical examination. They were required to be free from any organic or hereditary affection. Soldiers known to indulge in morphia, cocain, or alcohol were carefully eliminated from the colonial service. Eyesight had to be acute and was thoroughly tested.

The term of service was $2\frac{1}{2}$ years with the possibility of retention beyond that period in case of a favourable report from the officer commanding the Force. Service in the Protectorate counts double

towards pensions ; expeditions have, as a rule, been allowed to count as a year's service.

The Protectorate Force consisted wholly of infantry, and was organized in 14 companies of 162 men each, besides a recruiting dépôt (154 men), a signalling (heliograph) section of 30 men, and 20 bandsmen.

The company included 3 platoons of 50 men each, with 2-3 machine-guns. To each company were attached 30-50 permanent carriers who were armed with rifles and had received some military training.

Sources of Recruitment.—When the Force was first raised (1889) it was composed wholly of recruits from other parts of Africa, and mainly of Sudanese and Zulus. But by 1914 far the greater number of the men came from the Protectorate itself.

The Zulu element had almost entirely disappeared, and though the Germans set a very high value on the Sudanese, as the best material to be obtained for East African service, these excellent soldiers constituted only a small fraction of the Force, 'since', according to a German authority, 'their recruitment in the Sudan is opposed by political difficulties'.

Among the African peoples beyond the borders of the Protectorate on whom in 1911 the Germans were still to some extent drawing, may be mentioned the Somalis (accounted good soldiers 'but difficult to handle, owing to their refractory and revengeful disposition, and, like the Abyssinians, liable to succumb to the climate of the Protectorate'), and the Watonga from British Central Africa, who were considered 'very useful'.

In recent years an appreciable and apparently increasing proportion of recruits have been drawn from the Manyema (see pp. 76-7), a collection of tribes which have been formed from diverse elements—freed slaves of Arab traders, groups of immigrants who had moved from the Belgian Congo under pressure of famine, &c. Their settlement in the Protectorate is still recent enough to make them count to some extent as a foreign element ; but most of the Manyema in the German service have been born in German territory. They are described by an officer of the Protectorate Force as impulsive and easily excited, and therefore as soldiers brave and full of *élan* in attack, but with little power of endurance in defence, and inclined to acts of violence in peace-time.

Of the tribes native to the Protectorate the closely connected Wanyamwezi and Wasukuma (see pp. 72-5, 94) supply the greatest number of recruits. They are said to make quite useful soldiers

of average quality. The warlike tribe of the Wahehe is comparatively strongly represented, but, like all the mountain peoples of the Protectorate, they suffer much in the lowlands from malaria and other diseases. Good material is also to be found among the Wangoni and Wanyasa in the SW. part of the country (but see pp. 60-1), and the Wayao who live in the SE. of the German Protectorate on and near the Portuguese frontier. The Masai make good irregulars, but were found to be unsatisfactory material for the regular Protectorate force, as they could not stand the discipline and monotony of the life. A valuable and increasing source of recruitment has been provided by the families of the Askari and the 'Askari boys' (the servants of the Askari). The Askari boys have for the most part grown up in the force, have become well acquainted with all the details of the service and the use of arms, and being cut off from all tribal connexions can be regarded in much the same light as the foreign elements.

Lastly, the discharged Askari living in the Protectorate have always been regarded as a most important reserve in case of emergency (see above, p. 198 n.).

Conditions of Service.—Recruits enter the Force by voluntary enlistment, and bind themselves to service for 5 years. But except when a special arrangement has been made, the term has always been extended for at least 1 year more, and it was the aim of the military authorities to induce men to stay as long with the colours as possible. Askari have often remained in the Force as long as they were bodily fit for the service, but it was found that no advantage was to be gained from trying to keep men against their will after their covenanted term had expired.

Desertion is said generally to occur only at the beginning of the period of training, or when the deserter has committed some serious offence for which he expects to be heavily punished. Discipline has been strict, and according to some accounts has often been maintained with harshness. Nevertheless, no serious mutinies have occurred among Protectorate troops.

The pay is 20-30 (German) rupees per month for privates, and up to 150 rupees for native non-commissioned officers.

The Germans have tried to inculcate in the Askari a feeling that they are, as it were, members of a distinct and peculiar tribe, different from, and superior to, the rest of the native population in virtue of their serving the German Government in arms. Thus they are spared fatigue-duties as much as possible, and are employed to supervise gangs of native labourers, or to undertake such work as demands special skill. Only in exceptional cases are

Askari made to work side by side with ordinary natives, and never with gangs of convicts. For the same reason precautions are taken against allowing Askari to enter into close relations with the people of the district in which they are quartered, and it is considered especially undesirable that they should be stationed in the neighbourhood of their home and tribe.

It was a rule that the private life and family affairs of the Askari should be left carefully alone, except when the interests of the service were obviously concerned, or when the advice of the European was voluntarily asked. His religion (the Askari are for the most part Mohammedans) and his other manners and customs have also been respected. German officers were advised to listen carefully to all complaints, &c., and a good knowledge of the Swahili language is considered most necessary to the European officers and N.C.O.'s.

Equipment and Training.—In 1913 the Askari were armed with a short side-arm and the German Light Infantry rifle (*Jägerbüchse*) M. 71. It was then intended to provide the troops with the lengthened carbine 98, but it is not clear whether this change had been carried out before the beginning of the present war.

Europeans' uniform¹: tunic and trousers of khaki drill, with leggings, and a cork helmet; also a white undress uniform; white facings.

Natives' uniform: khaki-drill, with buttons of white metal; boots, blue putties, red tarbush with khaki cover and the number of the man's company in front in brass.

In marching order the troops carried valise, haversack, felt-covered water-bottle, blanket, and waistbelt with pouches in front. For weight and capacity of equipment see tables in Appendix II.

Police: same uniform as the troops, but with red cross-belt and a 'P' on white ground on the sleeve.

The training of the Protectorate troops was described in 1911 as based on the German Infantry Drill Regulations of 1906, with certain simplifications and alterations made to suit East African conditions. German words and phrases are used in orders: explanations, &c., are given in Swahili. Training ends with the company. The German authorities have laid it down that the principal results of the training should be a high standard of discipline, good shooting, and a feeling among the men that their arms, drill, and European leadership make them capable of facing successfully the heaviest odds. (See further, on some details of training, Part IV.)

¹ This account of the dress of the troops dates from 1904. Changes may since have occurred. The tables (App. II) giving weight &c. of equipment date from 1911.

PART III

DISTRIBUTION OF TROOPS AND POLICE BEFORE THE PRESENT WAR :
TRIBES LIKELY TO SERVE AS IRREGULARS

For the tribes a German account of 1911 has been followed.

For fortified stations and posts existing before the war see Chapter VI and map at end of book.

On the type of fort used in East African uncivilized warfare see p. 218.

On the distribution of the European population at the beginning of 1912 see Appendix III.

Wilhelmstal District.

A police detachment of 64 men at Wilhelmstal. Seven men under a police sergeant at Bwiko. A labour-commissioner with 4 men at Mombo.

About 40 discharged Askari settled in the District under supervision. They could be called up again in case of war. The local tribes cannot be used extensively as auxiliaries, but they can be won over by the prospect of obtaining cattle as booty. Their activity was thought likely to consist chiefly in driving off enemy cattle. The tribes might be played off against each other in case of local disturbances, since they are mostly hostile to each other.

The German authorities believed that valuable irregulars might be drawn from the Wanyamwezi who have migrated to this District, and from the natives of other Districts working on the plantations. These regard the local tribes with contempt. (On local tribes, see further, pp. 28-31.)

Tanga District.

No Protectorate troops stationed in the District. Police detachment of 75 men. Three men at Yasin, on the English frontier, as customs' guard, and 4 with the labour-commissioner at Muheza.

Hardly any retired Askari settled here. The local tribes of no use as auxiliaries, but the German authorities counted on about 18,000 workmen from other Districts, employed on the plantations (see further, on local tribes, pp. 30-5).

Pangani District.

No Protectorate troops quartered in the District. At Pangani 50 police. At Handeni Post, police detachment (1 European, 30 men), with a revolver-gun.

The German authorities regarded all local tribes as suitable for service as irregulars. In the case of an insurrection the 4,000 labourers not native to the district, who work on the plantations, could be utilized with advantage (Wanyamwezi, Wasukuma, Wangoni). (See further, on local tribes, pp. 34-7.)

Bagamoyo District.

Sixty police at Bagamoyo, and 20 police at Saadani.

About 12 retired Askari living in District. The Wazeguha might be used by the Germans as auxiliaries. In case of a rising in the District the 1,000 plantation-labourers who do not belong to the District could, perhaps, be used as irregulars and bearers (Manyema, Wangoni, Wafipa, Wanyamwezi). (See further, on local tribes, pp. 38-41.)

Morogoro District.

Police-detachment of the District 108 men. The post of Kisaki in 1911 was in a dilapidated condition, badly laid out and not capable of defence. Its removal was expected; but in 1914 map it is still marked as a police post.

Service as auxiliaries expected by the German authorities from the Wamakua settled in Tendiga, &c. 30 former Askari in and near Kilosa (principally Sudanese). Five or six discharged Askari, 3 of them Sudanese, at or near Kisaki. (See further, on local tribes, pp. 40-5.)

Dar-es-Salaam District.

The 10th Company, 162 men, and a recruiting dépôt, 150 men; signalling section, 30 men; band, 20 men. Police force, including police dépôt, 220 men (all at Dar-es-Salaam town in 1911) capable of bearing arms.

Serviceable auxiliaries are not available. In case of need labourers employed on the plantations could be used for this purpose. Discharged Askari with no fixed domicile in the District used to travel in it a great deal as retailers and traders. (See further, on local tribes, p. 46.)

Rufiji District.

Forty police. In 1911 there were only a few former Askari in the District (about 5). Only some of the coast-natives considered by the German authorities as capable of serving as irregulars. (See further, on local tribes, pp. 46-9.)

Kilwa District.

115 police, of whom 30 were in Liwale, 24 in Kibata, 6 in Chole (Mafia Island), the remaining 55 in Kilwa.

Ten discharged Askari in Kilwa and the neighbourhood. Auxiliaries believed obtainable in Kilwa and its immediate vicinity in sufficient number. The Chief Kaprima in Yingo on the Matandu did not take part in the rising of 1905-6, and furnished effective armed help. He was not disarmed, and could immediately provide the German authorities with a body of irregulars armed with muzzle-loaders (79 guns). Further, all the races of the interior can be used as auxiliaries. (See further, on local tribes, pp. 50-3.)

Lindi District.

The 3rd Company (162 men) stationed at Lindi. Police, 140 men, divided among the stations of Lindi (60 men), Newala (20), Tun-duru (30), Sasawara (10), Mikindani (10), and the rest in twos and threes at the head-quarters of the Akid-as.

27 former Askari settled in the District; of these 5 not native to Protectorate; 3 in Government posts (Wali, &c.). The Banyans and Goanese would probably side with the German authorities in a native rising.

The German authorities did not regard any of the natives as trustworthy auxiliaries. (See further, on local tribes, pp. 54-9.)

Songea District.

80 police at Songea station.

Some non-European traders (6 Arabs, 2 Banyans, 2 Indians, 2 Somali, 2 Sudanese). In the rising of 1905 the elephant-hunters of the Arab Rashid bin Masud in Kikole and the Matumbi tribesmen served the German authorities well as auxiliaries. Men of all Wangoni tribes make particularly good irregulars. (See further, on local tribes, pp. 60-3.)

Langenburg District.

The 5th Company (162 men strong) at Masoko, about 3½ hours south of New Langenburg. About 110 police and 40 Government boatmen (Baharia) distributed among the stations and posts.

The Waniakiusa, the Nyasa men, and population of Rukwa, might be used by the Germans as auxiliaries. The others, especially the mountain-races, were not regarded as trustworthy. (See further, on local tribes, pp. 62-9.)

Ujiji and Bismarckburg Districts.

The 6th Company (162 men) stationed in these Districts. One platoon (*Zug*: 50 men) with 2 machine-guns stationed at Bismarckburg. The other two platoons with 2 machine-guns at Ujiji, with the exception of 25 men stationed at the military post at Kasulo.

The Manyema, who come from the Belgian Congo, were regarded by German authorities as affording abundant and excellent material for irregular troops. They served the Government in the rising of 1905. Among the tribes native to the District the Wawende make the best auxiliaries. The different tribes might be played off against each other. 21 discharged Askari in Ujiji and 12 in Bismarckburg. Station runners and shore-watchmen might be also taken into service. The Indians and Arabs in Ujiji were not trusted by German authorities. Their behaviour in 1905 was very doubtful. The Gottorp salt-works could arm about 12 men with breech-loaders and more with muzzle-loaders. (See further, on local tribes, pp. 68-73.)

Tabora District.

The 8th Company (162 men), at Tabora. 110 police are stationed in Tabora and 30 in Shinyanga.

400 former Askari, among them 12 Sudanese, were expected by German authorities to serve as auxiliaries in the District. For an expedition outside the District, nearly all tribes were counted on as auxiliary troops. It takes two or three days to mobilize them. As discord is prevalent among the various tribes of the District, they can, under certain circumstances, be played off against one another. In the case of a revolt, the loyalty to the German Government of the non-European merchants was considered doubtful. The best weapons for auxiliaries from this District are said to be muzzle-loaders, which they know best how to use. (See further, on local tribes, pp. 72-9.)

Dodoma District.

Two platoons of the 4th Company at Kilimatinde: 3rd platoon at Singida on the Kondoa Irangi border.

In 1911 there were 40 Askari altogether in the neighbourhoods of Kilimatinde, Singida, and Mkalama (in Kondoa Irangi District). Wahehe make excellent irregulars, especially in the hills; Wagogo are good; less useful are the Wakaguru. All the tribes in the W. part of the District can be used as irregulars.

Kondoa Irangi District.

The 13th Company at Kondoa Irangi. One platoon of the 4th Company at Singida on the border between Kondoa Irangi and Dodoma. Detachments of police at Kondoa and Mkalama.

The Masai make excellent irregulars: Wanguru are good; less useful are the Wafiome and Warangi. Waniramba and neighbouring tribes can be used.

Moshi and Arusha Districts.

The 1st Company at Arusha (132 men); in Iraku, detachment of 1st Company (30 men). At Moshi station, a police detachment of 100 men; in Arusha, a police detachment of 30 men.

45 former Askari, of whom about 30 were not native to the District, were settled in 1911 on the Kware stream on the Moshi-Arusha road. About 150 oriental traders and about 300 native dealers (with no tribal connexions), 'probably loyal to the Germans against the natives of the District'. German authorities regarded all tribes except the mountaineers as capable of service as irregulars. A German authority said in 1911 that 'a doubtful element in case of war with a European power would be the Englishmen and the Boers'. The highlanders (Wajagga, Wambulu, Wapare) suffer from the climate of the plains. The Masai and Waarusha were expected to join Germans as soon as there was a prospect of obtaining cattle. Pay of one Masai fighting-man for a campaign, one cow. (See further, on local tribes, pp. 84-93.)

Mwanza District.

The 14th Company, 162 men: of these, 127 men at Mwanza, 35 at Ikoma. 85 police at Mwanza, and 35 at Shirati.

In the neighbourhood of Mwanza and Ikoma, about 225 former Askari, and among them about 30 not native to the District. Numer-

ous disorderly characters of the most various tribes in and around Mwanza were expected by the German authorities to enlist readily as auxiliaries. Besides these, the Wagaya alone were considered fit for such service, but they were reported unwilling to leave their homes. 'Divided up among the Askari they afford good protection against arrows with their great shields.' (See further, on local tribes, pp. 92-9.)

Iringa District.

The 2nd Company of 162 Askari, divided between the station of Iringa and Ubena Post (30 men).

About 10 retired Askari and 16 reservists liable to service in the District. There were about 250 traders settled in the District, of whom about 20 were Indians, 10 Arabs and Baluchis, and about 20 Sudanese, believed likely to support Germans against natives. The Wahehe and the Wasangu are pre-eminently suited to serve as auxiliaries. The latter can provide 8-9,000 men, with about 150-200 fire-arms. The Wabena can be used as porters, except for marches to the coast district.

It was thought in 1911 that in case of unrest in the District, it would be possible, by the promises of live-stock as booty, to play off against each other the Wahehe and the Wasangu, who have for long been enemies, and to create friction between the various chiefs. (See further, on local tribes, pp. 98-103.)

Mahenge District.

The 12th Company (162 men) stationed at Mahenge.

10 discharged Askari settled near the station, 2 of them not native to the Protectorate. 4 other retired Askari in District, 3 of them not native to the Protectorate. About 30 foreign merchants settled in the District would probably side with Germans against the natives. About 25 'Askari boys' (servants of Askari) and 6 station messengers could be immediately embodied in the ranks. The Wabena, Wabunga, and Wangoni were considered by the German authorities as suitable for service as irregulars. The Wapogoro are only useful for scouting, as they shirk fighting in the open. The Wadamba, Wangindo, and Wadwele do not make good auxiliaries. In 1905-6, in spite of the wide extension of the rising in the District, the German authorities were able to raise large numbers of auxiliaries there. (See further, on local tribes, pp. 102-5.)

Bukoba District.

At Bukoba were the headquarters of the 7th Company, 162 men strong, of whom about 15 men were at Kifumbiro Post, and 30 at Usuwu Post.

It was calculated that the 14th Company could reach Bukoba from Mwanza in about 10 hours in an English steamer, or in 2-3 days in the German company's vessel. The 11th Company could march from Kisenyi on the Kivu Lake to the Kagera in about 10 days, or from its head-quarters (in 1911) at Ilemera in 5 days. The 8th Company from Tabora could reach Usuwu in about 18 days.

The bodyguards of certain important Sultans in the N. were reckoned on by Germans as auxiliaries in case of war; each is from 50 to 80 men strong, and armed with muzzle-loaders. Also about 200 men from Kianya and Kiziba, who on a previous occasion were equipped with carbines (71 pattern) from Bukoba station. On the number of men capable of bearing arms in the different Sultanates see further, on Sultanates and local tribes, pp. 106, 107.

Ruanda District.

The 11th Company (162 men) at Kisenyi and Mruhengeri. A police detachment of 50 men, most of whom were stationed at Kigali.

Few retired Askari in the District. German authorities expected to obtain numerous auxiliaries from the Sultan Msinga for any campaigns against particular parts of the District. In the event of a revolt undertaken against German rule by the Sultan, or by the majority of the Watusi, it was hoped that parts of the subject Wahutu population might be induced to take arms against the rest, as there is now no feeling of tribal unity among the Wahutu of different regions. Watusi believed to possess rifles (see also p. 108). Auxiliaries might also be drawn from Urundi and Bukoba. It was reported that the auxiliaries in this District could be used only to collect and drive off enemy's cattle, and would require the most careful watching. (See further, on Sultanates and local tribes, pp. 108-11.)

Urundi District.

The 9th Company (162 men) at Uzumbura. A patrol of men of this company under the command of a European maintained in the highlands.

Retired Askari settled in Uzumbura only. As auxiliaries in the

event of a rising of the Sultan's party, the German authorities counted on: (1) About 300 to 400 bodyguard men of the Watwale (Chiefs) in the Rusisi valley armed with muzzle-loaders (already tried in the Lusokosa war). (2) At least 3,000 auxiliaries of the Mtwale Kilima about 4 days N. of Uzumbura. (3) 10,000 to 15,000 warriors of the Watwale Lusengo, Lusokosa, Bansabugabo, and Kamnaga in NE. Urundi. (4) Probably 2,000 to 3,000 warriors of the Mtwale Choya, in N. Urundi: this chief had always sided with the Germans, to whom he owes much. As the Warundi and the Wanyaruanda are enemies, the Warundi, in the event of an uprising in Ruanda, could be employed as auxiliaries. The auxiliaries of this district are of little use in a fight, but are reported excellent for spying, scouting, pursuit, destruction of enemy property, and cattle-tracking. (See further, on Sultan, local chiefs, and tribes, &c., pp. 112, 113.)

GERMAN WARFARE AGAINST NATIVES

The following notes are based mainly upon a text-book on Field Service in German East Africa issued in 1911 by the German military authorities at Dar-es-Salaam. This work is, of course, concerned only with the conditions of warfare against an uncivilized enemy. But a quotation from it may suggest a reason for including some of its matter in this chapter. The writer says, 'Apart from wars against native rebels, our Protectorate Force must always reckon with the possibility that it may find employment against the troops of foreign Colonial Powers. In that case the tactics (*Gefechtsarten*) of European warfare will in the main be applied, but at the same time it will be in many ways expedient to take lessons for such wars from the native methods, which have grown up out of the nature of the country, and to avail ourselves of such lessons as occasion may serve.'

The Germans acquired their experience of the conditions of savage warfare in the Protectorate through a long series of punitive expeditions. From 1889 to 1896 there were on an average eight or nine of these expeditions a year: from 1897 to 1899 there were four a year. In 1900 there was only one of any importance. In 1903 occurred the campaign against Kisabo, the chief of Uzumbura. In 1905 there broke out a great rebellion, in which very many of the tribes S. of the Rufiji river took part (see Chapter II). Since the suppression of this rising the Protectorate has been comparatively quiet.

The Native Enemy.

The native population of the Protectorate, numbering in all between 7,000,000 and 8,000,000, is divided into many tribes of very various fighting strengths and characteristics. For details as to tribal numbers, weapons, fighting qualities, methods of warfare hitherto adopted, political attitude, mode of life, &c., see on pp. 28 seqq. the tabulated information drawn from the German official account of 1911. Not one of these tribes in 1911 was regarded by the German authorities as completely trustworthy: and it may be remarked that in the rising of 1905 tribes which had for long been at feud with each other combined against European rule.

The East African negro is of great bodily activity, and can move easily in difficult country. He may prove a determined, bold, and dangerous enemy, especially when under the influence of magical 'medicine' and in the hands of good leaders. His methods of warfare, which are connected with tribal characteristics and weapons, and depend also on the nature of the country, are subject to constant variation. The native has besides been learning lessons from the trained troops of the German Government. It is necessary, therefore, to be prepared for surprising changes in the tactics of a tribe in each new campaign which it undertakes.

Arms.—Very few of the natives not in the service of the German Government are equipped with breech-loaders, but numerous muzzle-loaders are to be found in certain parts of the Protectorate. Yet the native spear, shield, bow and arrows, still predominate, and are in many regions the only weapons in use. The Masai and some of the neighbouring tribes are also armed with short swords.

A muzzle-loader in the hands of an experienced native hunter may be fairly reliable up to about 200–220 yds. But this is exceptional: and muzzle-loaders when used by men who are little accustomed to fire-arms show very poor results even at close range, being often less effective than bows and arrows. Their smoke and flash often betray the position of their users. Their chief importance lies in their moral effect on the natives, to whom they impart a sense of power, and whose courage and determination they may thus increase.

Arrows have among some tribes a range of over 220 yds. If not poisoned they may cause death up to 100–170 yds.: but poisoned arrows are dangerous up to 220 yds., as even a small scratch may prove mortal. Up to 55 yds. the native bows are very reliable and effective.

Throwing spears can produce good results up to 20–35 yds.

The stabbing spear is a very effective weapon in the hands of strong and agile natives, if they can find the opportunity to use it when attacking in superior numbers.

Preparations for War.—A native outbreak may come very suddenly. Thus in the widespread rebellion of 1905–6, the natives kept their preparations so secret, that the rising took the Germans by surprise at all the points at which it was carried out. The plan of action is generally known only to a few leaders, and its secrecy is jealously guarded. The Germans found by experience that the natives whom they most trusted might be plotting against them.

On the other hand, signs of a coming war have often been detected, especially when it was to be on a considerable scale and therefore involved long preparations. Such signs might be a number of vague floating rumours, desertion of work by native labourers or servants, the carrying of stores of food into the bush, the withdrawal of women, children, and cattle to secure hiding-places, &c. Special importance was attached by the Germans to the careful watching of medicine men, as nearly all tribes make 'war-medicine' before a rising, but have often succeeded in keeping the performance of such rites from the knowledge of the authorities.

Methods of Warfare.—The Germans found themselves opposed by an enemy who troubled himself little about a base of operations, and not at all about lines of communication. His stores of food are usually well hidden in inaccessible and unknown places in the bush, and are easily shifted if need arise. His advance has to be looked for from all quarters, for his mobility and almost incredible marching powers, coupled with accurate knowledge of the country, make him able to carry out apparently impossible détours. He has no fixed line of retreat, for after a defeat his forces break up into small parties, which retire in all directions, and concentrate again at points previously agreed upon, often in the rear of the victorious troops. The natives think themselves beaten in a fight only when they have suffered great losses: flight and escape with small losses they regard as a success. The spread of news, &c., among the natives is excellently organized, and gives them a great advantage in war. Only in exceptional cases has it been possible for the Germans to take them by surprise.

With regard to the constantly changing tactics of the enemy, the Germans found that the only safe course was to expect him to employ his most dangerous methods, which are in general (i) in dense country (bush, tall grass, &c.) a sudden attack from an ambush at close quarters delivered against a marching column,

(ii) in open country, a sudden attack at night, or in the twilight or mist of dawn.

The tribes armed with muzzle-loaders have (or had) a fairly uniform tactical method. They begin by opening fire from an ambush, at as close a range as possible, on marching troops. Positions are frequently prepared beforehand with felled timber, thorn-zariba, &c., and obstacles (felled timber, sharpened stakes set in the ground, &c.) are placed across the road of the advancing force. Behind this prepared position paths are left clear to facilitate a flight into the bush. The natives' fire, which may be opened from front, flank, or rear, or from all quarters at once, is directed especially against the officers and other Europeans with the column. After discharging their fire-arms, the natives retire hastily to reload, and to get ahead of the column so that they may repeat their attack in the same fashion at a point farther along the road. By constantly harassing their enemy in this way, they hope, while avoiding serious losses on their own side, to tire him out, compel him to expend his ammunition, and gradually reduce his power of resistance till he can be finally overwhelmed by an energetic spear-attack. The natives usually shoot too high with their muzzle-loaders, a fact of which they are very well aware. They therefore generally choose positions on ground lower than the road along which their enemy's column is moving. By this means their fire becomes more effective: also they had come to learn that the German native troops, when firing down a slope, usually sent their bullets over the head of the enemy.

Spear-attacks are sometimes made with great boldness and determination, especially at the beginning of a campaign, while the natives have not yet suffered serious losses, and are still fanatically confident under the influence of recent 'war-medicine'. The spear-attack on a column on the march from an ambush close to the road is the most effective of the enemy's methods.

In dense country (as might be expected) it is often the plan of the natives to draw their enemy into a pursuit which will eventually lead him into an ambush.

The natives have apparently learnt that the moments when their enemy is pitching or leaving his camp may be favourable for an attack. The morning mist which may occur when a column is breaking up camp increases the chances of a surprise.

In the earlier campaigns in the Protectorate the natives very frequently relied upon the stubborn defence of strongholds and fortified positions. Such tactics are now much more rarely practised, as their uselessness against the superior weapons of

the Germans has become generally recognized. The strongholds of many chiefs have been destroyed by the Germans, and their reconstruction forbidden. Most of them, however, could easily be rebuilt in a very short time. Stone walls were found in earlier campaigns; but the defences of native strongholds are generally more or less similar to the German permanent camps described below. The Germans apparently learnt a good deal from the natives with regard to obstacles, &c. Inside native village-compounds (*tembes*) there is usually found a confused collection of smaller compounds and streets. In many regions the tribes have natural strongholds in great rock or earth caverns, often with many ramifications which make their capture a matter of some difficulty when they are held by a determined enemy. Such caves may have several air-shafts.

Usually the natives show more boldness and determination, more readiness to deliver a serious attack (especially in dense country), at the beginning of a campaign, for reasons mentioned above (see remark on spear-attacks). After the enthusiasm produced by magical rites has begun to wear off, and after they have suffered considerable losses, they are apt to grow more cautious and wary, are not to be provoked into exposing themselves, watch for their chances more carefully, and gradually come to limit their efforts to guerilla operations, such as attacks on small parties or on convoys, continual sniping from the bush, &c. Such guerilla methods may be kept up for a long time and prove very exhausting for the troops which have to deal with them.

German Methods.

General.—Owing to the fact that no tribes in the Protectorate could be fully trusted by the Germans, the whole area of the colony had to be considered enemy country, even when the overt rising was confined to certain regions. Full reliance could be placed only on those points and lines of communication that were occupied by troops and strongly secured. The only completely secure base for German operations against the natives was the sea-coast, which could be held with the assistance of warships and white troops. Secondary bases were to be found in the two railways, and (as neighbouring Powers permitted the transport of supplies through their territory) in the three great lakes of Victoria Nyanza, Tanganyika, and Nyasa. The important German strategical points included all the fortified stations, which were to be made impregnable to a native enemy. Between the stations there were other points marked out to be occupied at once in case of war for the protection of the connecting

roads. All railway-bridges of any considerable size, and all important railway stations were to be occupied in war-time, even if the area of operations was at some distance from the railway line, as a rapid spread of the revolt was always possible.

Among the first objectives of German punitive expeditions were the fortified positions of the enemy, the hiding-places of his women and children, his crops, cattle, and stores of food, and, in regions where water was scarce, his watering-places. All points strategically or politically important to the enemy were to be as soon as possible occupied, fortified, garrisoned, and used as *points d'appui* for further operations. The enemy was further to be forced to fight under conditions which made him suffer heavy losses : but this was found extraordinarily difficult. It needed columns as mobile as possible and as independent as possible of their bases or of fresh supplies. In order to tempt a wary adversary to fight, recourse had to be made to such stratagems as the disguising of Askari as porters, &c. It was found that towards the end of a long rising the enemy, when his crops had been destroyed and his stores of food in the bush had been discovered or exhausted, suffered very heavily from starvation. His women and children, especially, died of hunger in great numbers. The German military authorities seem, at least in later wars, to have practised the removal and feeding of the women and children when these could be found, while they accepted famine as their ally against the men.

Though cavalry, mounted infantry, and artillery could be used effectively in certain parts of the country, the formation of corps of these arms was eliminated, chiefly on grounds of expense. The Protectorate Force (raised from a strength of about 1,450 to about 2,500 between 1889 and 1914) had machine guns (at first 1, and later 2-3, to each company) and some light artillery, and the regular troops were supplemented if necessary by detachments of the trained police (a force which increased gradually : strength in 1905, 640 : in 1913 2,200).

The position of numerical inferiority (often very great) in which the Protectorate troops found themselves in every considerable expedition, made it a principal concern of German officers to prevent the enemy from pushing home his attack as far as a hand-to-hand *mêlée*. For this reason all military posts and permanent camps were surrounded by elaborately constructed obstacles, which might hold up the enemy's rush, leaving him exposed to the fire of the defence. But the danger of a hand-to-hand fight against great odds proved much more serious in the field, owing to the exceedingly dense nature of much of the country that had to be traversed. Especially

exposed is a column on the march, advancing (as may be unavoidable) in single file, and encumbered by a train of porters along a road enclosed by thick bush or tall grass (see below, on the March).

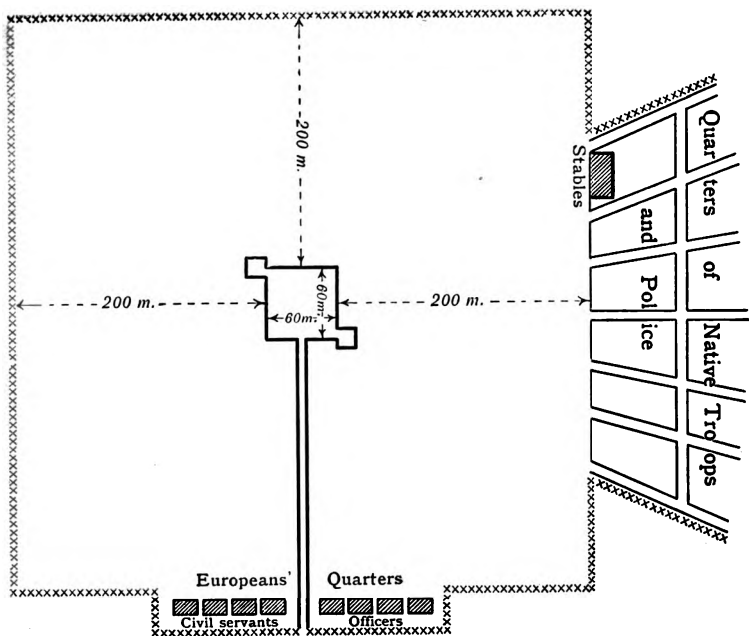
Military Posts: Permanent Camps.—For details as to the number and distribution of German military posts in the country, see above, Chapter VI. These forts and permanent camps were meant only to repel an uncivilized enemy with poor firearms. But from the construction of obstacles out of material supplied by the country, the Germans probably gathered experience which they would find useful in warfare against the troops of a civilized Power. The choice of position for posts, etc., has been partly determined by political and hygienic considerations.¹ As regards defences, the purpose of these was not simply to give protection against the missile weapons of the natives (muzzle-loaders and bows), but mainly to prevent a sudden assault in which the post might be rushed by a numerically superior enemy.

The size of each military post was determined, on the one hand, by the fact that it was meant to shelter in time of war the Europeans in the neighbourhood, the non-European foreign traders (Indians, Arabs, &c.), and the families and dependants of the native troops, and on the other hand by the consideration that it should be defensible for some time by the force likely to be available for holding it. Garrisons of posts had to be reduced as much as possible in time of war in order to leave sufficient forces for field operations, and the withdrawal of native regulars had to be made good by the use of the native police. Even these, however, might have to be used in the field, and the defence would be entrusted to invalids, European civilians, discharged native soldiers, and traders (Indians were considered poor, Arabs good, material). The typical East African fort for uncivilized warfare is surrounded by a stone wall, with two bastions at diagonally opposite corners, which are intended to flank the curtains with rifle or machine-gun fire. These bastions frequently have the form of towers. The walls would be sometimes loopholed, but against an enemy with inferior missile weapons a platform enabling the garrison to fire over the top of the wall was preferred by the Germans. Unburnt bricks may take the place of stone as the material used. The walls may have revetments of earth.

Permanent camps (for the duration of a campaign or period of

¹ The neighbourhood of termite-heaps would be avoided as far as possible. Stores, ammunition-boxes, equipment, &c., are soon eaten away by termites. Termite-heaps are often spread over areas of thousands of square yards: their destruction is then practically impossible.

Type of Fort on a Station in German East Africa



Quarters for Native Troops

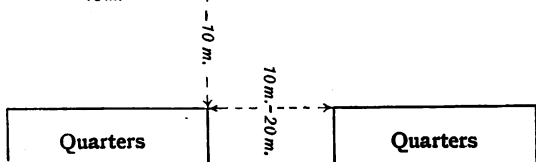
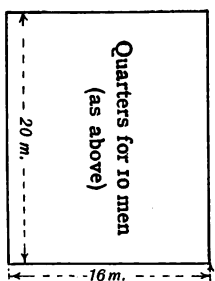
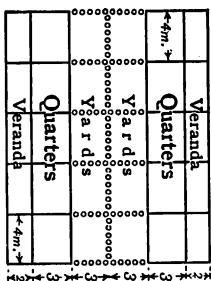


FIG. 1. Type of fort on a German East African Station, with details of barracks.

unrest) would usually take the same square form, with two bastions at diagonal corners. The material used would be, where possible, timber (lopped trees left without being uprooted are less liable to be damaged by fire or insects). The earth of the ditch round the palisade would be thrown up against it. Where no timber was procurable, shallow trenches might be made with high parapets (suited to the enemy's inferior weapons). If corrugated iron was available, a wall consisting of double sheets with earth between them might be constructed.

Round military posts and permanent camps obstacles of various kinds would be placed, but always so as to give a field of fire of some 220 yds. Besides barbed wire (which might be fastened to growing tree-stumps), use might be made of hedges of thorn-bush, agave, and cactus (these soon become a home for snakes and other poisonous creatures), zaribas of felled thorn, felled tree-branches, pointed stakes or bamboos set deep in the earth and hidden with leaves or grass, concealed pits, &c. Thorn-zaribas can be effectively and easily made. Near permanent camps, obstacles such as pits and hidden stakes might be placed on the roads or paths which the enemy were most likely to use, or even in the bush.

(iii) *Lines of Communication*.—For details with regard to transport see Chapter XI. Off the railway, porters have been mainly used, supplemented by camels, mules, donkeys, as pack animals, or, on better roads by bullock- or donkey-carts; but the use of animals is made difficult by presence of tsetse. Motor-traffic has been possible only on a few of the best roads. Unless circumstances made it necessary to place a field-force in a disturbed district as quickly as possible, the organization of the lines of communication up to the area of operations was carried out before the expeditionary force was moved.

The German text-book makes the following suggestions: Posts along the line of communication in enemy country not to be more than about 35 miles or two long marches from each other: in areas still quiet, 60–120 miles' distance between the posts might be suitable: where possible they might serve also as protection to important military points. Hygienic considerations, water, &c., as usual.

Garrisons of posts would draw supplies from the neighbouring country. The strength of the garrisons would be reduced as far as possible: but as each would have to provide escort for convoys to the next post, and the minimum strength of such an escort is reckoned at 15 men, the garrison of a post in enemy country is put at a minimum of 1 or 2 Europeans and 30 men.

The stores at the posts were found to be endangered by rats, termites, and other vermin, and by the damp which penetrated through walls and floors of the temporary store-rooms. The keeping of stores raised off the ground on trestles, &c., the fumigation of the store-rooms and camp, and the airing of corn, are measures recommended; but only tinned provisions would be safe from damage or destruction. Thorn-zaribas, &c., may be constructed to protect cattle and other animals from predatory animals.

(iv) *Transmission of messages.*—The extension of wireless telegraphy was urgently recommended by the military authorities as the only sure means of transmitting reports, orders, &c., in time of war. (See p. 295.)

The wire telegraph lines would be liable to interruption by weather, wild animals, or by the enemy, the German forces being too weak to guard them adequately.

The Protectorate Forces include a heliograph section, and each company has some signallers and a heliograph apparatus. Heliograph stations would be strong enough to be defended against natives for some time by a few men (stone-tower with a door raised 3 yds. above the ground, and reached only by a movable ladder is the form recommended).

Relays of runners (the usual form of postal service in peace) could be used only in quiet districts. The distance between relay-stations would be so calculated that the runner could cover it in a day without undue strain. Thus it would vary with the nature of the country: the average distance would be 35–40 miles. Many even of the native paths are passable for bicycles, which are therefore recommended for such messenger-service. Collapsible bicycles can be carried easily across stretches of ground that cannot be ridden over.

Messengers sent in war would generally be traders who know the country, native irregulars, or friendlies, or, if necessary, single native soldiers in disguise. They would usually travel by night and off the road. An oral message would be given to them to supplement the written message in case the latter were lost. It is suggested that at least in the rainy season all letters should be wrapped in waterproof cloth, oil-skin, or something of the kind; otherwise their arrival undamaged cannot be reckoned on. Dispatch of several messengers by different ways is recommended; messengers to be left a certain discretion in choosing their route. The offer of high rewards may be necessary when the service is dangerous. All messengers would be told to do their best to obtain information with regard to the enemy.

In extreme need, when the news to be carried is of very great importance, and all other means fail, patrols of Askari in native dress may be sent.

Information may be conveyed by signs previously agreed on, such as marks on trees, lopping of branches, placing of small pieces of cloth on bushes, folded notes placed in tree-trunks, &c.

Experiments with carrier-pigeons were being conducted in 1911. In 1913 it was reported by the British consul that the 'recent attempts to establish a pigeon-post have not met with much success'.

For short distances, signal shots, or (by night) magnesium and light-pistols would be employed. Star-signals fired from pistols have also been much in use: distance 12-18 miles, or, under good visual conditions, farther. At long distances the white and green lights are often difficult to distinguish. The lights are white, green, and red: the cartridges are fired nearly perpendicularly at short intervals. The code in use before the present war was as follows:

White = 1, red = 2, green = 3.

1 = Call, *or*, Signal understood.

2 = Not understood, repeat.

3 = Signal ended.

11 = I am in danger: bring assistance.

12 = Yes, order is being carried out.

21 = I have lost my way: show camp by light-balls or shots.

22 = No, order cannot be carried out.

23 = All return immediately to camp.

31 = Anything observed of the enemy?

32 = Nothing observed of the enemy.

111 = Halt.

112 = Send reinforcements immediately.

113 = Await written (or oral) message.

121 = Am attacked.

122 = Who is there?

123 = Officer or man of Protectorate Force.

211 = Camp where you are.

212 = Enemy intends to attack, *or*, Rising feared.

213 = Porters deserted: cannot move.

221 = All march immediately to the District-station.

222 = All detachments immediately rally on me (order of commanding officer).

223 = Enemy retiring N.

231 = " " NE.

232 = " " E.

233 = " " SE.

311 = Enemy retiring S.

312 = „ „ SW.

313 = „ „ W.

321 = „ „ NW.

322 = Pursue enemy with all troops.

323 = Morse code to be used, 1 = dash, 2 = dot.

321 = Send doctor immediately.

332 = Ammunition lacking : fresh supplies needed.

333 = O.C. has arrived here.

Free for special application, 13, 33, 1111, 1112, 1121, 1122, 1211, 1212, 1221, 1222, 2222, 2111, 2112, 2121, 2122, 2211, 2212, 2221.

Intelligence and Scouting.—The conditions of warfare in German East Africa (the unreliability and sudden outbreaks of the tribes, and the facilities for ambush and surprise) make efficient intelligence and scouting a most urgent matter.

(a) Intelligence in peace-time.—The desirability of a most careful study of the country in peace time has been impressed on the German officers.

The use of disguised native soldiers or other trustworthy persons as spies is recommended : but the long employment of particular persons as spies is deprecated, owing to the inclination of the regular spy to earn his reward by the concoction of interesting 'information', or by suiting his reports to the wishes of the European. He may also be influenced by personal feelings against those on whom he reports. Such an agent may also in time come to betray his employer. Constant change of spies is, therefore, advisable.

The tribal factions might be turned to use in collecting information : but reports from the tribal opposition party must, of course, be very carefully tested.

The European might learn something from his servants about what is going on in the region. Soldiers or servants might have wives from the suspected neighbourhood, and in that case the conversations of these women among themselves might yield valuable news. But if questioned directly they would rarely tell what they knew.

The best spies have been found to be tried native N.C.O.'s, retired native soldiers settled in the country (especially if they came from other parts of Africa), and Arab traders long settled in the Protectorate.

It is insisted that readiness is urgently necessary at all places and times. In periods of unrest, rifles and ammunition would be carried even by fatigue parties.

(b) Intelligence in War.—With regard to scouting in war, the absence of cavalry in the Protectorate Force, the difficulty of the country, and the mobility of the enemy, make it dangerous for small patrols or parties of troops to undertake this duty, except in the neighbourhood of the main body. For scouting at any considerable distance, detachments of some size, friendlies, irregulars and spies would be used.

A substitute for cavalry has been found in the irregulars and friendlies. In campaigns against the natives the irregulars would be armed partly with breech-loaders, partly with muzzle-loaders, throwing or stabbing spears, shields, bows and arrows according to their tribal custom. All would wear a distinguishing mark or badge and have a signal-cry or pass-word. The irregulars might be under their own leaders (chiefs, &c.), or, especially if inclined to show fear, under the command of a native N.C.O. or soldier. It would lie with them to seek out the enemy while he was still at a considerable distance. Reconnaissance at a short distance ahead of the column would be necessary if it was intended to surprise the enemy ; but this is usually very difficult. See p. 213 above.

Scouting to the flanks, which would be mainly the duty of the irregulars, is in thick bush-country extraordinarily difficult, but it was found to be the only sure means of protection against surprise. Where it proves impossible, shots or volleys might be fired into the bush to induce the enemy to betray himself, especially when he is confident and excited at the beginning of a campaign. In the later stages of a war, he would probably have learnt caution. (See below, under Protection on the March.)

Local spies' accounts would have to be cautiously treated. Employment of several spies who do not know each other is recommended. Resident foreigners such as Arabs, Somalis, Sudanese, Manyema are good as spies and guides (not Indians).

Prisoners would be interrogated immediately on being caught or brought in, when in an excited state and likely to betray themselves. Comparison of reports of separately interrogated prisoners is advisable.

The March.

(a) Protection on the March.—The peculiar dangers to which a column on the march is exposed in much of East African country, have already been noticed. Constant readiness for immediate action is necessary. German expeditions are recommended to march with loaded rifles, and usually with fixed bayonets. Machine-guns and guns, where possible, are not to be carried in sections but ready for immediate use. Machine-guns might also, in case of

necessity, be fired unmounted, with the aid of a tree-trunk, load, shoulder of kneeling man, &c.

The column must be as short as possible: but to keep it within limits is difficult on E. African roads. Where the road is broad enough, the German authority advises the moving of a column in file with the porters (if their numbers permit it) between the ranks: or, in cases where the width of the road is exceptionally favourable, to march two platoons in file abreast of each other, this formation being considered more adaptable to the condition of a sudden attack on either side or on both flanks. Usually, however, it is possible to move in single file only. In that case the necessity of keeping the column in a compact body without gaps or straggling becomes specially urgent. The recommendations in the German text-book are: a moderate marching pace; frequent halts to close up column, and particularly after any considerable obstacle which the native troops pass more quickly than the porters; gaps in the column to be reported at once; arms not to be piled during the halt, but kept in the men's hands; patrols and posts pushed out at each halt: halts to be avoided at particularly dangerous places, e.g. in thick bush; the men to understand that it is their duty to keep a look out to right and left (those who are to turn to the right in case of an attack, to look out to the right, those who are to turn to the left, to look out to the left).

It may be the intention of the enemy to induce a sense of security in the troops by not showing himself for a long time, in order that he may effect a more complete surprise: the absence of any sign of the enemy ought not to cause any relaxation in precautions.

When a native soldier (Askari) sees an enemy, he calls out 'Rechts' (or, 'Links') 'Adui'—Enemy to right (or left); or if the enemy attacks he shoots at once. As soon as the troops hear a call or shot of this kind they prepare to fire to right and left: they do not prepare to fire to one side only, unless expressly ordered to do so.

Reconnaissance on the march would be carried out by parties of irregulars and friendlies (each party about 20 men armed with breech- or muzzle-loaders, but very lightly equipped), who would search the country, especially side-roads and villages, 1-2 hours ahead of the column, and send back men or retire on the column if they found the enemy in any strength. If closely pursued they would have to warn the column by frequent shots. They would have to know intended camping-place at end of the day's march. (For badges, pass-words, &c., see above.)

Strong or fairly strong columns would send ahead a point of 4-10 Askari (not a German officer or N.C.O. unless the men needed

heartening, as might be the case when the enemy at the beginning of a campaign is believed to be powerfully 'medicined'). The point would be generally not more than 50 yds. ahead of the main body. When possible the point would move in extended order.

A rear-guard may be attacked at any moment, even during an advance. It would be composed of Askari, and, as it would generally be separated from the main body by the train of porters, it would be expected to hold up a strong attack for some time or beat off a fairly weak attack unassisted; and its strength would be calculated accordingly. A European would generally be in command of it, and it would be accompanied by the medical officer. The rear-guard would march immediately behind the rest of the column: its commander would have to see that the column is properly closed up.

The weakest part of every column on the march is naturally found to be the train of porters. Askari and irregulars would be distributed among the porters, but it is recommended that they should march not singly, but at least in pairs. In larger columns the escort of each group of porters would march separately at the rear of the group. The regular military porters are armed with breech-loaders; but these are only a small fraction of the total number required. The others would be armed with such weapons, European or native, as might be available (with spear only, if the porters are suspected of readiness to desert).

Protection of the flanks in dense country is very difficult, and must greatly delay the marching troops. The irregular patrols sent ahead to reconnoitre have to search the country on both sides of the road; but the enemy may often let them go by and occupy the country behind them.

Patrols of irregulars sent out to the flank on a line with the main body may be driven in on it, closely followed by, or mingled with, the enemy, so as to cause confusion. It is therefore suggested that they should be ordered to retire to one side or the other, not in a straight line to the road. No general advice as to flank-protection in difficult country is considered possible: the situation must be left to the judgement of the column-commander. When thick bush country has to be crossed, it is sometimes found necessary to clear a road 10-20 yds. broad under protection of fire of the troops. A fight with a greatly superior enemy in a narrow path in thick bush might lead to the destruction of the column.

On night marches no flank protection and no advance patrols of irregulars are considered necessary: only the point is retained.

(b) *Porters*.—These would be divided into separate parties: for

example, one for the equipment of Europeans, one for the equipment of Askari, one for ammunition, one for supplies, &c. They would be placed under the command of Askari detailed for the purpose. It is recommended that porters, if unreliable, should be warned that any man laying down his pack will be shot, and that they should be roped together. (See further with regard to porters, Chapter XI, under Road-Transport.)

(c) *Guides* are often unreliable. It is suggested that they should be roped in couples to prevent their escape: several guides should be employed if possible, and communication between them allowed only under supervision.

(d) *Night Marches in War*.—Great care would be taken to prevent gaps, &c., in column. A halt of $\frac{1}{4}$ hr. after every hour, and after 5 hrs., a halt of $\frac{1}{2}$ –1 hr. are suggested. Native troops and porters are very nervous and superstitious, and frequently imagine that they see ghosts at night. Lanterns, magnesium torches, and flare-pistols have to be kept always in readiness. A sudden attack by enemy on night-marches would generally be met by a counter-attack with the bayonet.

See further on supplies, Chapter IX; on pioneer-service, Chapter XI.

(e) *Communication between different parts of Column*.—Gaps in column must always be reported at once.

Native soldiers and porters are accustomed to pass along oral or written messages, as the road may be too narrow to permit the sending of runners from one part of the column to another.

The following words and signs were in general use in 1911:

Polipoli = Go slower ahead.

Simama = Point, halt.

Boma = Enemy attacks: form square (*Knäul*).

Kariba = March on ahead quickly.

Kambi = Point has reached camp.

Kudi = Rearguard, halt.

Kwenda = March!

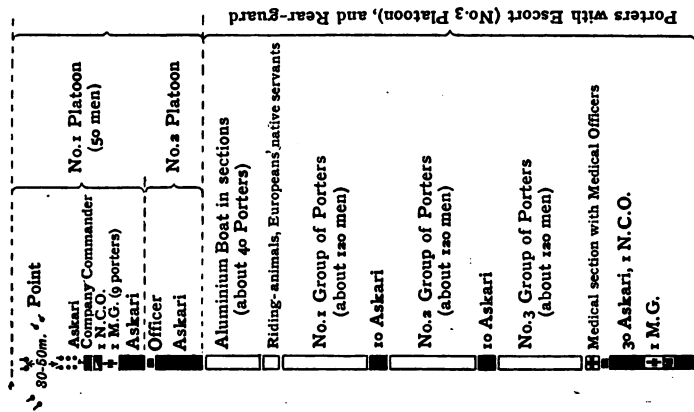
1 blast of whistle = Look out!

4 short blasts = Halt!

2 long blasts = March!

Rule for finding probable length in *metres* (1 metre = about 3 ft. 3 in.) of a column of one company or less moving in single file, but with good march-discipline:—Add to the number of the Askari one and a half times the number of porters, servants, &c., and multiply the result by three. For a column of several companies add 100 metres (about 110 yds.) for each company.

Example of order of march for one Company of (3 Platoons) of German Protectorate Troops



Example of order of march for an Expeditionary Force of 4 Companies of Protectorate Troops

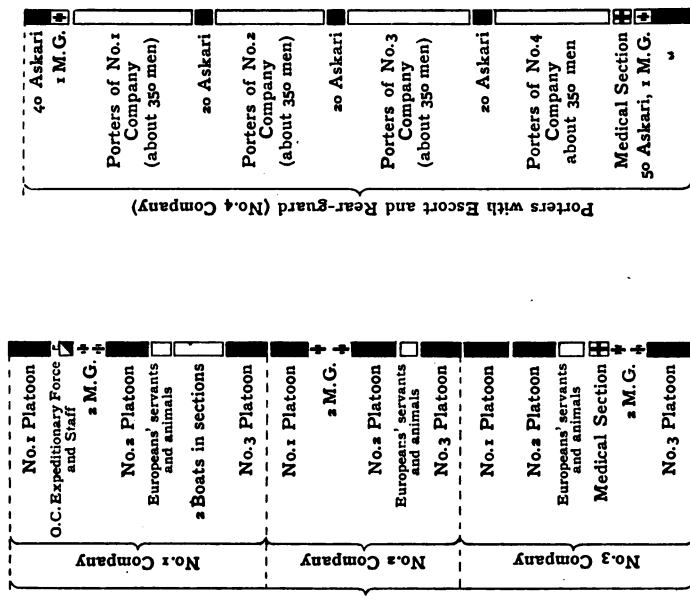


FIG. 2. Order of March of German Protectorate Troops.

Before the present war a mobile company, with full complement of Askari and porters, would have consisted of :

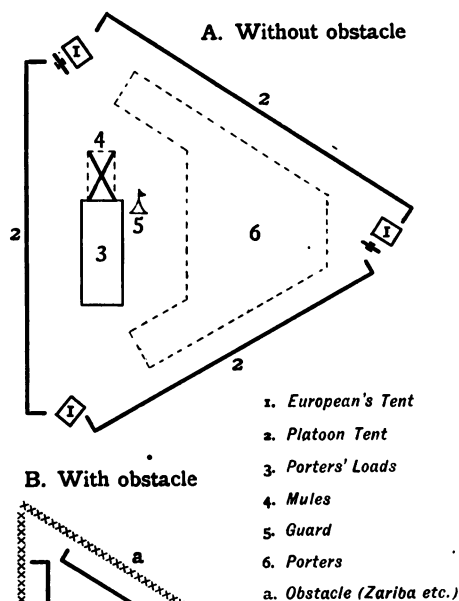
(a) *Europeans.*

- 1 Company leader.
- 1 Officer.
- 1 Surgeon.
- 2 N.C.O.'s.

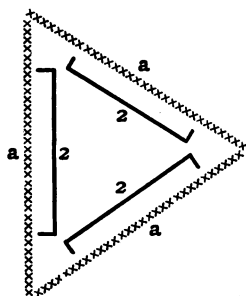
(b) *Porters.*

	Porters.
For 4 Officers and N.C.O.'s, 10 each	40
„ 1 Surgeon	14
„ 5 loads of provisions for 6 months, 2 porters per month	60
„ 60 loads of ammunition 71 (each of 500 cartridges)	60
„ 2 machine-guns	10
„ 12 cartridge belt cases (filled)	6
„ 12 boxes of accessories	2
„ 1 cartridge belt filler, polishing material, oil, &c.	1
„ 10 cases of ammunition 88 (each of 675 cartridges)	10
„ 6 loads of medical necessities	6
„ 4 loads star-pistols, money, papers, &c.	4
„ 6 reserve rifles	1
„ 2 loads clothing, &c.	2
„ 2 loads boots	2
„ 1 load bootmaker's appliances	1
„ every 10 Askari one porter for cooking pots	15
„ aluminium boat in 9 sections (4 porters for each section)	36
„ 1 length of rope, 300 metres	1
„ 1 collapsible boat	2
„ 20 loads of provisions, 25 days' rations in each, at 1 kilogram (2.20 lb.) per ration	25
	<hr/> 293
10 per cent. reserve porters	29
	<hr/>
Total porters	322
Askari	about 150
Askari 'boys'	100
Europeans 'boys'	13
	<hr/>
Total of natives	585

Example of Camp of German Protectorate Troops (active service)



B. With obstacle



Camp of German Protectorate Troops covering camp of Irregulars

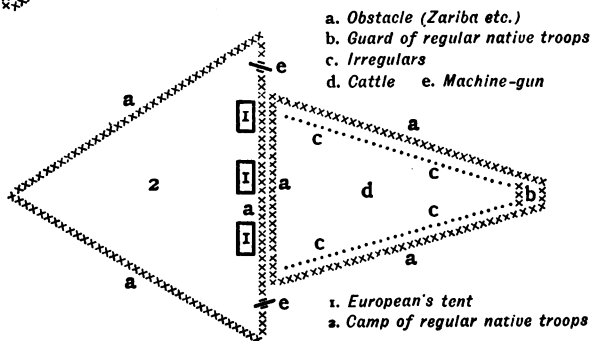


FIG. 3. Encampments of German Protectorate Troops.

(vii) *Temporary Camps (active service).*

(a) Protection of camps.—The Germans, in operating against natives, have not generally used outposts of the kind employed in civilized warfare, but in place of such outposts protection is provided by a guard with sentry posts (always double) in the immediate neighbourhood of the camp, and also by patrols. In dense country a field of fire would be made by clearing ground. Sentry posts would be on all sides, as an attack might come from any quarter: by day they would be placed on points of vantage giving a wide view (trees, rude watch-towers, &c.). Patrols of irregulars or Askari would surround the whole camp at a considerable distance from it. All fatigue parties, &c., would have orders to return at once to camp on seeing the least sign of the enemy's presence, or on hearing alarm-shots, &c. Protection of resting troops by day would be provided mainly by irregulars (with exception of the guard). But if an attack were expected, especially at night, as much as half of the force might have to be on the watch. Where time and place allow and material is at hand, the camp would be surrounded with lines of obstacles with 10–15 paces' interval between them, and consisting of thorn-bush, felled branches, pointed bamboos, &c. In order to have time to construct these obstacles, it is recommended that camp should be reached, if possible, at 3 p.m. at latest. If the construction of such obstacles should be impossible, the native villages might be used as camps; but here there would be danger of recurrent fever (see Chapter IV, p. 115).

At night the camp would generally be protected by double posts inside the obstacle (patrols may be cut off or lose themselves easily at night: they are useful only in open steppe). At night, wire or thread lines with bells or tins filled with stones might be employed. Posts are required to call each other's numbers, unless the position of the camp is to be kept from the enemy. If in exceptional cases sentry posts beyond the obstacles should be necessary, it is suggested that they should be placed in dugouts from which they can signal with lights without being seen by the enemy.

Every person approaching the camp at night would be challenged with the word 'Nani?' (Who?). Answer (for all officers, men, porters, &c.) is 'Askari ya, x Kompagnie', unless express orders have been given that another answer be used.

Arms would never be piled. Every man, Askari or irregular, would be required to keep his rifle ready. In dangerous places Askari sleep wearing side-arms. Europeans' tents are not closed. Machine-guns would be laid before nightfall; and the tent of the

European serving a machine-gun would be near the latter. Loaded star-pistols would be kept near the guard. On an alarm, fire would be opened by machine-guns, Askari, and irregulars without express orders, unless ammunition is scarce. When it is necessary to spare ammunition, the men would be told not to fire without orders. Obstacles would then be strengthened and large bonfires lighted about 50 yds. from the camp.

(b) Site, arrangement of lines, &c.—In the choice of camping-ground, hygienic considerations (with reference, e.g., to recurrent fever, dysentery, and malaria) are most important, especially as in East African punitive expeditions the sick have generally to be carried with the field force, the mobility of which may thus be seriously decreased. Tents should open *outwards* if there be a zariba or similar obstacle round the camp, *inwards* if there be none. The tents of each platoon of Askari are joined together, for the reason that in detached tents the men at night might miss the firing-line and proper direction. Europeans' tents are placed at the ends of the Askari lines. The regular porters would camp in the Askari lines. They must take part in the defence of the camp in case of an attack. Other porters and the loads would be placed in the centre: in an attack, the ordinary porters would be required to lie still on the ground. It is remarked that no front should ever be left entirely without troops.

Irregulars: (a) if possible, within the camp (in the Askari lines: they must be shot if they leave the firing-line during an attack); (b) if too numerous to bring into main camp, a separate camp would be formed for them, adjoining and protected by the main camp (flanking fire of machine-guns). The zariba between the two camps would be specially strong, to prevent the irregulars from trying to take refuge in the main camp and thereby causing confusion. It is recommended that some of the Europeans should have their tents here. A guard of Askari might be placed at the end of the irregulars' lines, and small fires would be lit round the latter; (c) if irregulars cannot be trusted, or if infectious diseases are prevalent among them, a separate camp at some distance would be assigned to them, the defence of it being left wholly to them.

Special caution is necessary to prevent a surprise during pitching and breaking up of camp (part of force should always be under arms and ready, &c.).

The Fight.—Most engagements in East African uncivilized warfare take the form of an encounter-battle, and especially consist in the beating off of sudden attacks on marching troops. Usually

they take place in thick bush or high grass, with the enemy in ambush by the side of the road. In case of an attack by a native enemy, unless the column is already marching in square with porters in the middle, the Askari form into clumps (*Knäule*) by sections (*Gruppen*), then sections rally round their platoon-commanders (*Zugführer*), and platoons round the company-commander. Formation of company-square (*Kompagnieknäuel*) is to be carried out as quickly as possible, porters being in the middle of the square. For enemy's tactics see above. In case of a pursuit into the bush, care should be taken lest the enemy should be drawing the troops into an ambush: reserves should be kept on the road. Usually, however, pursuit is impossible.

Natives always shoot too high: when the enemy has fire-arms, it is recommended that troops should generally fire kneeling or lying:¹ against an enemy armed with spears, they are to fire standing, in order to be ready for a hand-to-hand *mêlée*.

'Only complete readiness and close march-formation can avert a disaster' in case of a sudden spear-attack on a column on the march from the immediate neighbourhood of a road. Against poisoned arrows native shields give good protection. (Irregulars or friendlies armed with shields may be distributed among troops for this purpose.) Independent fire, though giving a larger percentage of hits than volleys, has been found not to have such a strong moral effect on the enemy as volley-firing, which also avoids waste of ammunition by the native soldiers.

¹ With regard to timber as cover, it is said that the coco-nut palm, owing to its sappy and strong fibre, gives more protection against rifle-fire than most other kinds of wood.

CHAPTER VIII

RESOURCES AND TRADE

(1) GENERAL REMARKS

THE trade of the Protectorate has increased rapidly during recent years. The total increase of imports and exports may be seen from the following table :

<i>Year.</i>	<i>Imports.</i>	<i>Exports.</i>	<i>Total.</i>
	£	£	£
1900	601,527	214,682	816,209
1903	559,403	352,710	912,113
1906	1,257,642	549,736	1,807,378
1909	1,697,085	655,974	2,353,059
1912	2,515,000	1,570,000	4,085,000

The total revenue from the Protectorate nearly quadrupled between 1902 and 1912, rising from £160,900 to £623,750 ; and the Imperial subsidy decreased in the same period from £246,600 to £180,900.

The chief items of export in 1903 and 1911 respectively are given in the following table :

1903.		1911.	
	£		£
Rubber	52,400	Rubber	239,050
Ivory	44,900	Sisal	226,600
Copra	27,870	Hides	151,750
Live stock	14,130	Copra	92,250
Sesame	13,960	Cotton	66,600
Coffee	12,850	Coffee	63,300
Hides	6,520	Wax	40,850
Grain	3,900	Ground-nuts	24,500
		Ivory	24,300
		Timber	24,000
		Sesame	20,200
		Samli (native butter)	9,350
		Rice	6,000
		Copal	5,035
		Ornamental and dyeing woods	4,800
		Capok	1,150

(2) AGRICULTURE

The chief wealth of the country consists in agriculture and cattle-farming. Mining is in its infancy, and industry has hardly yet been established. The natives chiefly grow cereals for their own consumption, the commonest varieties being those known locally as Mtama (sorghum), Mwele, and Ulezi. For the same purpose they also grow manioc, rice, maize, sweet potatoes, peas and beans.

A certain section of the population, however, lives almost exclusively on bananas. These tribes live in the plateau between the lakes, and also in isolated hill-districts such as Kilimanjaro and western Usambara.

The chief crops, and the areas occupied by them in 1912, are as follows :

	Acres
Rubber	65,000
Sisal	42,000
Cotton	28,000
Coco-palm	12,000
Coffee	3,000
Capok	2,900

Rubber is the most important source of wealth. The natives tap and sell a certain amount of *wild rubber*, of which there is a considerable supply ; but the output is fluctuating, since a general rise in the price of rubber stimulates the collection of it, and *vice versa*. During the rubber boom of 1909-10 great activity was displayed. The exports in 1910 were valued at £145,147 ; in 1911 they sank to £58,731. This fall was also partly due to drought.

The greater portion of the rubber is grown on the plantations of European owners. The tree planted is almost invariably *Manihot Glaziovii*, which yields rubber at the early age of three years ; but *Kicksia*, *Hevea brasiliensis*, *Ficus*, and *Landolphia* have also been tried. There are machines for cleaning, rolling, and drying at Muheza, Mombo, and Tanga. The plantations lie mostly in the Usambara valley ; there are others near Kilwa and Lindi and along the Central Railway. Wild rubber, on the other hand, grows along the shore of Lake Tanganyika S. of Ujiji, E. of Lake Rukwa, and in all the south-eastern districts.

The exports of plantation rubber in recent years were as follows :

	£
1908	20,798
1909	55,887
1910	164,597
1911	180,314

In 1911 the amount exported was 60 % more than in 1910 ; but owing to the condition of the market it fetched a lower price. The fall in price was hastened by a certain over-production, consequent on the boom of 1909-10, and entailing both a glut on the market and a decline in quality.

Plantations to the value of £1,200,000 in the Usambara valley are owned by British capital. Of the rubber exported from the Protectorate in 1908, only $\frac{1}{8}$ % came to the United Kingdom, the rest going almost exclusively to Germany. In 1911 the export to the United Kingdom had risen to 30 % of the whole. Exports pass almost exclusively through Tanga. In spite of the amount exported, rubber is not a commercial success.

Sisal.—This is grown on plantations only. The production has greatly increased since 1910 : though new plantations have not lately been common, owing to fear of over-production. In 1909 34,000 acres were grown ; in 1910, 38,000 ; in 1911, 42,000. The export in 1911 amounted to 11,212 tons, and the crop was quadrupled between 1908 and 1912. The hemp is of very good quality, and is grown over the whole colony. The exports have been made entirely to Germany. It is a crop well adapted to the country, and has so far been free from destruction by diseases or animals.

Coffee.—The earlier plantations in the Usambara valley were not very successful. This was found to be due to the unsuitable nature of the gneiss soil. Plantations on the volcanic soil of Mounts Kilimanjaro and Meru have been much more successful ; in this region 1 to 3 lb. of coffee can be gathered from trees in their third year. Coffee plantations have therefore been increasing here at the expense of cotton. Experiments have also been made in the districts of Mpapwa,¹ Iringa, Morogoro, Songea, Langenburg, Ujiji, and Mahenge. The total area under coffee rose from 3,262 acres in 1909 to 5,808 in 1911 ; and the rise in the value of exports may be seen from the following table :

	£
1899	4,817
1905	23,204
1908	47,111
1911	63,300

In 1911 about 83,000 lb. were exported to England, 207,000 lb. to the rest of Europe ; 57,000 lb. to Zanzibar. The crop is liable to damage by parasites ; this caused a bad harvest in 1909. Coffee

¹ Former district, now divided between Dodoma and Kondoa Irangi. See map.

is also grown by natives on an increasing scale in Bukoba and also in Moshi.

Cocoa.—This is grown on plantations amounting to 200 acres. New plantations are not being made; but the output has been slightly increasing. In 1911 the export was 17,600 lb., of which the greater part went to England.

Tea.—Planted on a small and decreasing scale. Only about 50 lb. exported in 1911.

Cotton.—The Government has made great efforts to promote the growing of cotton both by the natives and in European plantations. The Reichstag estimates for 1913 included a grant of £10,000 per annum, for 1913 and the three following years, for the encouragement of cotton-growing in the Protectorate. Experimental farms had before this date been established at Mbama (Tabora District), Mpanganya on the Rufiji river, and Myombo near Kilosa. These farms are controlled by European experts, who give regular courses of instruction; there are also itinerant coloured teachers. Seed, which is imported from Egypt, is distributed gratis; in 1910–11 170 tons were so disposed of. A uniform price is guaranteed to native cultivators, and the Government offers prizes consisting of cash and agricultural implements for the best crop.

The white planters also are helped by the Government, and by the Kolonial-Wirtschaftliches Komitee, which assists planters in procuring implements and disposing of their stock, and also advances money on their crops.

In spite of this artificial encouragement, cotton has not proved very successful. It is liable to frequent and highly detrimental diseases, and is much damaged by parasites and drought. The prevalence of the tsetse-fly makes it in many districts impossible to use oxen; and the planters are compelled, except those who have steam-ploughs, to use manual labour, which is expensive and inadequate. Experiments have been made in cotton-planting all over the Protectorate, but Wilhelmstal, Tanga, and part of Pangani are altogether unsuitable, and from 1911 it seems to have been largely discontinued in these districts, and in Bagamoyo and Moshi.

About 15,000 acres of plantations existed in 1909 and 28,000 acres in 1911. In many of these plantations cotton is only grown as a 'catch crop' before the sisal or rubber reaches maturity.

	lb.
The export was in 1909	1,140,000
1910	1,367,000
1911	3,970,000

of which over 99 % went to Germany. The greater proportion is native-grown.

The German official documents ascribe the comparative failure of the cotton-crop hitherto to the fact that it is still in its experimental stage. It is, however, clear that very little would have been achieved if cotton had competed with other crops on equal terms.

Copra.—Coco-nut palms in maturity are a considerable source of profit, the annual yield of a tree being about 4s. 2d. ; but as they do not bear for the first 8–10 years the planting of them does not attract European capital. The number owned by whites tends to remain constant at about 600,000. The palm grows chiefly on the coast and on the island of Mafia ; but it is also successfully cultivated as far inland as Morogoro and Kilosa ; and there is a plantation at Tabora. The native cultivation of copra is large, and is mostly in the hands of Arabs. It increased greatly during the construction of the railways, owing to the demand for young nuts to drink. Most of the copra goes by dhow to Zanzibar : an increasing proportion to Germany, and a decreasing amount to Marseilles. The total export in 1909 was 3,027 tons (German) ; in 1910, 5,338 tons ; in 1911, 5,421 tons.

Palm-oil.—There are about 700,000 oil palms on the eastern shore of Lake Tanganyika, N. of Ujiji ; also plantations at Bismarckburg, Tabora, and elsewhere. Practically none is exported. The principal district is subject to sleeping-sickness, which affects the output seriously.

Capok.—In 1909, 1,040 acres of this crop were grown ; in 1910, 1,348 acres ; in 1911, 2,838 acres. The export is small in comparison with the output ; the latter is considerable, but is mostly used in the Protectorate itself for stuffing mattresses, &c.

Sugar-cane.—This was formerly much cultivated by Arabs, using slave labour. It is now only practised on a small scale on plantations in the Rufiji and Pangani Districts. Very little is exported ; but a refinery has been built at Pangani, where rum is made for export. Plantations have been started in the Wilhelmstal and Kondoa Irangi Districts. The natives grow sugar for their own use.

Tobacco.—The natives grow tobacco for their own use almost universally, but not in sufficient quantities to meet the whole of the native demand. Native tobacco is best in the Districts of Pangani, Bagamoyo, Morogoro, and Kondoa Irangi. It is most grown in the NW. of the Protectorate, between Lakes Tanganyika and Nyasa, in the Rovuma valley and the neighbourhood of Iringa and Kilosa.

Experiments have been made in planting tobacco suitable for European use, but the difficulties seem to be great and there has been as yet very little success. Turkish cigarette-tobacco has been tried in the Wilhelmstal District, and the so-called 'Boer' tobacco on the slopes of Kilimanjaro and Meru. The latter experiment is commercially successful, but the quality of the leaf is poor.

Spices.—*Cloves* are grown on Mafia by natives; European plantations have been tried on a small scale on the same island. A plantation was made without success at Dar-es-Salaam.

Pepper has been grown in Bukoba; 140 acres were grown in 1912. *Chillies* are grown in Wilhelmstal.

A little *ginger* is grown in the Mahenge District by natives.

Betel-nut is grown in Pangani by the natives. In 1911 the harvest was valued at £135.

Ground-nuts are a common native crop. They are grown along the coast, from which they are exported to Zanzibar; their cultivation in this District is, however, declining. The other districts in which they are common lie S. of Victoria Nyanza and close to the other lakes.

Manioc and *sweet potatoes* are generally grown by the natives, especially in the SW. and along the coast.

Potatoes have been introduced experimentally in several places. They have made some progress in the higher and cooler districts of the interior; but the demand among the white population is still chiefly met by imports. Current prices do not seem to repay local farmers. British East Africa and Germany are the chief sources of supply. About 1½ tons were exported to Zanzibar in 1911, as against an importation from all sources of about 170 tons.

Peas and beans.—These have long been grown for their own use by the natives; they are now also planted for export, especially beans. The total value of the export was £15 in 1910, £32 in 1911. The natives cultivate them increasingly.

Copal.—The copal-gathering trade is in the hands of the natives and is not organized. The tree grows in the coastal region, and fossil copal (which is 2–3 times as valuable as the fresh gum) is found in the same region. The fossil supply seems to be almost exhausted; and the lower price of the fresh gum makes the gathering of it less attractive to the natives. The output has accordingly declined of late years.

		lb.		£
1909 export		317,979	value	7,578
1910 „		245,449	„	7,446
1911 „		209,987	„	5,369

Cereals.—The native cereals are sorghum, maize, rice, and sesame. Wheat has been introduced and is being grown in parts. The European population grows wheat, oats, barley, rye, and rice.

Sorghum is the chief native grain. It is grown almost universally. A little is exported, but the crop is mostly consumed in the Protectorate. The native name is Mtama. It is especially common on the coast; inland its place is to some extent taken by *maize*.

Rice is not grown in sufficient quantities to supply the demand; there is a very large importation from India. European rice-fields have been planted in the Lindi and Pangani Districts to the extent of 404 acres.

Wheat, oats, rye, and barley are all grown in the higher districts by white inhabitants for their own use, not on a commercial scale. Wheat is liable to destruction by mildew.

Sesame is grown chiefly in the river-valleys running down to the coast. The export in 1909 was 1,308 tons (German); in 1910, 914 tons; in 1911, 1,635 tons.

Beeswax.—This is an important article of trade, the value exported in 1909 being £32,962; in 1910, £33,642; and in 1911, £40,850. This rise, following a period of depression in the wax trade, is ascribed to the increasing education of natives, who used to regard wax as refuse. The wax comes chiefly from the district between Mwanza and Tabora, the Yasungwe valley, and the southern coastal area.

Agricultural methods and problems.—In addition to the Government cotton farms at Mbama, Myombo and Mpanganya, mentioned above, there is an Institute of Agricultural Biology at Amani, a farm for agricultural research and cattle-breeding at Kibongoto in the Moshi highlands, a farm at Morogoro, and a veterinary hospital at Kigali. Instruction in the improvement of pastures is given in Dodoma and Kondoa Irangi.

Native agriculture suffers from imperfect implements and methods. The hoe is the usual implement; but better implements have been imported from Europe for sale, or for distribution by the Government. Land is cleared by burning down the forest trees; the ashes make the soil very fertile for about five years, after which time a new patch is burnt and the old abandoned or planted with bananas or coco-nut palms. Owing to the prevalence of this method it is probable that most of the forest in the Protectorate is not original growth, but 'secondary'. The natives have no tools for cutting heavy timber, except from European sources, and can only clear forest-land by fire. They practise an elementary rotation of crops between sorghum and manioc. The lack of water

in the interior may cause the ruin of the whole crop if the season is dry ; this happened in 1907 in the northern districts. Agriculture is also impeded by locusts, disease of the sorghum crop, and tsetse-fly, the latter being especially common W. of Victoria Nyanza. The field work, especially on the coast, is done to a great extent by women.

The *European plantations* are worked by native labour ; and the difficulty of getting such labour is the chief obstacle to the extension of the plantation-system. Some tribes, especially the Masai, refuse to work on plantations ; the best labourers are the Wanyamwezi, the Wasukuma, and the Wairamba. Even these are not easily got. The natives have their own farms (*shambas*), which are fertile and produce all they need without much labour ; and they prefer working them to serving a European planter for wages. Licensed recruiters go round to collect labourers for the plantations, who make a separate contract with each recruit. The contracts are made for a year ; a certain margin being allowed for days on which the men are not working. About 50 per cent. return to their homes on the expiration of the contract. Government officials (*Distriktkommissäre*) are appointed to superintend the relations between employers and employed. Wages in the Usambara valley, the chief plantation district, are 12-15 rupees per month.

'Labour markets' have been established in the District of Dar-es-Salaam. Planters report to the district-commissioner the number of hands required ; upon which, with the help of the local chiefs, as many natives as possible who are willing to work are assembled at a centre where the planters can meet them and make contracts personally.

These measures do not seem to have supplied the whole demand. The opinion is expressed among German residents that native labour can only be procured in sufficient quantities either by legal compulsion, or by taxing the native till he is forced to work in order to pay his taxes.

(3) STOCK-FARMING

Native Cattle-farming.—In 1912 there were about 2,000,000 native-owned cattle in the Protectorate. The breed is small, but suited to the country ; attempts to improve it by crossing with European stock have failed not only owing to the suspicions of the natives but owing to the unsuitable nature of the breeds selected. A fairly satisfactory cross-breed has been established in Bagamoyo.

Cattle-breeding in the strict sense of the word is practised system-

atically and successfully by the Masai and Watusi, and to a lesser degree by the Wahehe and Wagogo. The Masai breed is the best, and is very well adapted to the requirements of the country. Many pastures suffer from overstocking; this causes epidemics and general deterioration of the stock.

European cattle-farming.—In 1912 there were 43,000 head of cattle owned by whites. These ranches are chiefly in Bukoba, Moshi, Langenburg, Dodoma, and Kondoa Irangi.¹ The importation of European cattle has almost always failed, chiefly owing to tsetse-fly and the various cattle-diseases (see below). The Government in 1912 advised the cessation of imports of stock and the production of a breed based on native stock, especially the Masai type.

Cattle-farming on the coast is increasingly difficult, owing to the diseases prevalent there and those brought by cattle from the interior. But in the hinterland it is a profitable occupation. *Hides* form an important article of trade: but their price on the European market is not high, owing to the practice of drying them in strong sunshine. The annual export is inferior in value only to rubber and hemp. The current price for a good ox varies between £1 in the interior and £3 on the coast.

Sheep and goats.—In 1912 natives owned about 5,000,000 sheep and goats; Europeans about 33,000. But these were almost exclusively native breeds. European sheep have been introduced for the sake of their wool, and also Black Forest goats; but these experiments have entirely failed owing to disease and to lack of practical experience. The European-owned sheep are mostly in the Arusha District, which is perhaps the best district for stock-farming. Sheep and goats are most plentiful in the west, but are increasing in the south.

Horses are used and bred in small numbers in Arusha and Wilhelmstal. In most of the Protectorate they cannot be used. There were 172 in 1912.

Donkeys are bred successfully in Arusha. There were 1,579 in 1912. They are, like horses, subject to the tsetse-fly.

Mules are for the most part imported. There are very few, mostly at Dar-es-Salaam; but they withstand the tsetse fly-better than either horses or donkeys.

The *zebra* has been experimentally used for draught and riding. It is, however, too light for the former and its temper too uncertain for the latter. A cross between it and the horse seems to be rather more successful.

Pigs have been introduced and bred with considerable success,

¹ The former District of Kilimatinde. See map.

especially in Wilhelmstal; also in Morogoro and Arusha. There were 3,000 in 1912. A large farm in Wilhelmstal District produces hams, pork, and sausages.

Some *ostriches* have been captured and kept in farms in Moshi and Arusha, but ostrich-farming has not yet been attempted. There seems, however, to be no reason why it should not be successfully undertaken, given expert knowledge.

Native *butter* (*zamli*) is made in all districts where cattle exist. There is a considerable export of it, especially across the land frontiers into the interior. 357 tons were exported from Mwanza in 1910.

Cattle Diseases.

In addition to the veterinary hospital at Kigali, the Government has established new slaughter-houses under proper inspection in Arusha and at Dar-es-Salaam. The inspection of carcasses shows that 'measles' (tapeworm eggs in the flesh) is frequent, amounting in Arusha to 6% of the whole stock. *Distomum hepaticum*, the parasite of the liver, is also common in cattle, sheep, and goats. *Echinococcus* and tuberculosis, on the other hand, are rare.

Rinderpest, according to the report of 1912, appears now to be endemic. But towards the end of the same year a very serious outbreak occurred, beginning in the north and extending to the Ruaha river. The mortality varied from 10 to 70% of the cattle affected. A serum station was shortly afterwards erected at Mpapwa.

African malignant catarrhal fever is endemic. Research has discovered no method of dealing with it; but it is checked by quarantine of infected districts.

Coast-fever is also dealt with by means of quarantine. A method of inoculation has been discovered, but was in 1912 only in an experimental stage. The Ruanda cattle are immune and cannot spread the infection.

The micro-organisms of *piroplasmosis* (Texas fever) and *anaplasmosis* are universally present. They do not produce the fever in native cattle, which are quasi-immune. It is not true immunity, because the organisms do not die, and can therefore be transmitted through ticks to other cattle. This is the chief reason why European cattle cannot be successfully imported, since all attempts to render them immune have hitherto failed. Cattle of a better class have a lower degree of resistance to piroplasmata, and can only survive the disease if infected very young. The cattle may be dipped to destroy the ticks, and baths for this purpose have been

made at Dar-es-Salaam. There is a method of inoculation, but it requires that the animals yielding the vaccine should be kept free of ticks, and this has not been ensured.

Anthrax was very prevalent in 1911 in several herds in the Usangu region. It is endemic in Ruanda and widespread.

Horse-sickness occurs in the months April to July. The only districts which are free from it are western Usambara, Ngorongoro, and the highlands of Iringa and Langenburg. In the other districts horses cannot be used.

Scab is common among sheep and goats.

The *tsetse-fly*¹ seems rather to have increased than diminished in recent years. In 1906 and later a marked increase was observed, due perhaps to the fact that in 1903 the annual burning of the dry grass at the end of the dry season was forbidden. It extends practically over the entire Protectorate, and chiefly attacks transport oxen. Epidemics have also been traced to the ordinary gadfly or *Stomoxys*.

(4) FORESTRY

The native system of agriculture is very destructive to the timber. To check this destruction the Government has formed a large number of reservations. At the beginning of 1912 there were 161 of these, with a total area of 968,836 acres, i. e. 0.51 % of the whole Protectorate. 32 of these reservations were formed during 1911, and the forestry department is of recent and rapid growth. A service has been established to guard the forests against fire; the cost of this was in 1911 £277. 196 acres were planted during the same year, at an expense of £349. Previous to 1911 the forestry administration was temporarily conducted from the district centres; but in that year three forestry districts were created, having their centres at Wilhelmstal, Dar-es-Salaam, and Mohoro.

A considerable quantity of timber is exported. The value of this was in 1909 £3,688; in 1910 £16,977; in 1911 £24,000. An increasing proportion of this was destined for Germany, the remainder mostly for Zanzibar. Bark, tanning woods, and ornamental woods were also exported to the value of £1,875 in 1909, £5,046 in 1910, and £4,800 in 1911.

(5) MINERALS

The mineral resources of the Protectorate are not very large. They include coal, iron, copper, lead, gold, graphite, uranite, mica, garnets, tourmaline, salt and soda.

¹ For the *tsetse-fly* in relation to cattle, &c., see also Chap. XI.

Coal of good quality is found 15 miles S. of New Langenburg, and also at Wiedhafen on Lake Nyasa.

Iron ore occurs frequently; especially between Lakes Tanganyika and Nyasa, and near Kilimanjaro.

Copper is found at Ujiji in the form of copper quartz (46 % copper) and also at Masasi, N. of the Rovuma.

Lead is found 15 to 30 miles E. of Kondoa Irangi.

Gold occurs frequently in a district 200 miles E. and W. by 150 N. and S., lying between Victoria Nyanza and Tabora. Several places in this region are worth mining. The Kirona mine, begun in 1909, produced in that year 3,515 tons (German) of ore, 7,333 in 1910, and 7,132 in 1911, and gold to the value of £42,134 went to Germany in 1910. The so-called 'Bismarck Reef' and 'Victoria Reef' do not seem to be productive, but a few other mines have been opened. Another small deposit, not worth working, is near New Langenburg.

Graphite was found in the Lindi District in 1904, and is reported to be of good quality; but its development was checked by the native rising of 1905-6, and it never appears in the list of exports. It is also said to exist in the Uluguru mountains, near Morogoro.

Uranite was found in 1904 in the Uluguru mountains. It does not seem to have been worked.

Mica is considerably the most important mineral product. It occurs chiefly in the Uluguru mountains; also on the NE. shore of Lake Kivu and at Mahenge. In the first of these three sites it is extensively worked by three companies. The plates are of large size and seem to be of good quality. The value of the export was £12,940 in 1909, £16,040 in 1910, and £17,414 in 1911. A very small fraction of this (0.04 %) goes to the United Kingdom; the rest to Germany. There are deposits in Usambara, but attempts at mining there do not seem to have been successful.

Garnets occur at Mpapwa and Luisenfelde on the Rovuma. They are worked at the latter site, but the output is extremely small (154 kilos in 1911, value £590), and is exported to Germany alone. The industry suffered in 1909 from over-production.

Tourmaline is reported in the Uluguru mountains.

Salt is produced at Gottorp near Ujiji. 1,600 tons (German) were produced in 1910 and 1,700 in 1911. It is exported almost exclusively over the inland frontiers into the interior, and the trade is expected to develop with the general increase of inland traffic. Small salt-pans also exist in the Bagamoyo District.

Soda in the native state, and of good quality, exists in great quantities on the shore of the Natron lake. It has not yet been

worked ; it does not seem possible in the present conditions of transport and of the market to work it profitably.

The number of persons employed in mining rose from 1,915 in 1910 to 2,235 in 1911.

(6) INDUSTRY

Trades and manufactures, European.—Carpenters, smiths, printers and bookbinders, brewers, bakers, and saddlers, saw-mills, oil and soap works, and sausage factories are being established in the districts inhabited by Europeans. These are as yet only on a small scale, insufficient to cause great diminution of imports.

Ditto, native.—The chief native manufactures are mats and basket-work, best among the Watusi, oil (palm, sesame and ground-nut), molasses, pottery, soap, salt, iron hatchets (best from Usinja, Mwanza District), spears and other weapons (chiefly among the Wajagga ; the industry has declined with the growth of peaceful habits among the Masai and other warlike tribes), hoes and agricultural implements, which are in many parts still preferred to European goods ; ornaments of iron, copper, and brass wire (best in the Bukoba District), wood-carving, leather sandals, embroidery and weaving. Mats and oil are alone exported ; the export of mats in 1909 was £2,464, and in 1910 £1,411.

There is a native industry in *building dhows* in Kilwa and Dar-es-Salaam.

A few *pearl* and *sponge* fisheries, owned by Arabs, exist.

Fishing.—A good deal of fishing is done on the *coast* by the men, while the field-work in that region is chiefly done by women. The coast is very rich in fish, but only a few species are used. Smoked shark is a delicacy ; crabs, conger-eels, cuttle-fish, and mussels are also eaten.

Smoked fish from the *lakes* is a common article of trade. It comes largely from Tanganyika, and is sold in the markets as far away as Tabora.

In the wet season much fishing is done in the *rivers*. During this season the natives flock to the rivers and live in temporary towns on their banks until the rivers dry up again.

Hunting.—Before 1908 there were three classes of hunting licence. There are now two only ; one value 10 rupees, for natives, the other value 450 rupees. The latter alone enables a hunter to shoot or trap big game. In order further to limit the destruction of big game it is forbidden to hunt or kill elephant cows or calves ; and a special permit in addition to the licence is required for hunting elephants. Each permit allows the shooting or trapping of two

elephants. The same limitation is imposed on the hunting of rhinoceros, giraffe, eland, and buffalo; in the case of the zebra, great koodoo, white oryx, colobus monkey, and maraboo, four head of game are covered by one permit.

The *ivory trade* was, before the German occupation, the chief industry of the country. Up to 1909 there was an increase in the output; since that year it has declined. The decline may be due to the enforcement of the new game laws; but hunters assert that elephants, especially large tuskers, have decreased. The statistics of the export trade are as follows:

						lb. avoir- dupois	Value £.
1905	.	.	.	.	.	48,053	24,290
1906	.	.	.	.	.	42,672	21,669
1907	.	.	.	.	.	56,647	33,169
1908	.	.	.	.	.	62,471	30,291
1909	.	.	.	.	.	114,540	51,319
1910	.	.	.	.	.	79,905	37,154
1911	.	.	.	.	.	56,863	24,270

CHAPTER IX

SUPPLIES

CAREFUL attention to questions of supply is necessary to maintain the health and fighting capacity of Europeans in the tropics.

A certain portion of the supplies may be obtained from the country itself, at least under normal conditions.

For meat one may obtain in different districts oxen, sheep, goats, pigs, ducks, poultry, and in places game.

Raw flesh, on account of the danger of tapeworm, must never be eaten. Meat can only be kept from one day to two days, owing to the heat. If plunged into hot water immediately after being killed it lasts a little longer. On marches it goes bad even more quickly than in camp, where it can be exposed to the air. It ought always to be braized to make it tender. The so-called biltong of the Boers keeps good for months. It is made by cutting up meat into strips, rubbing in salt, and drying it in an airy but shaded place till it is quite hard.

The use of tinned meats is usually necessary. Tinned foods should, when opened, unless immediately used, be transferred to receptacles of glass or porcelain, as otherwise they very easily become poisonous. They should always be used with care.

Fish in abundance can be obtained on the sea coast and in the large lakes. They are generally rather tasteless and often infested with worms. They should be examined before cooking.

Bad eggs are often supplied by the natives. Eggs can be tested in this way : in water fresh eggs sink to the bottom, doubtful ones sink a little, bad ones float on the surface.

It is most important to arrange for a supply of fresh vegetables. Many European vegetables, including potatoes, are cultivated in gardens in by far the greater part of the Colony. In addition there are the vegetables of the country, a kind of spinach, maize, beans, peas, young bamboo sprouts, tomatoes, cucumbers, sweet potatoes (whose early leaves give also a kind of spinach), and manioc.

Little should be drunk on the march. Alcohol should be avoided altogether, and men should accustom themselves to be satisfied with a little water or tea, with the occasional addition of lemon-juice.

The use of alcohol in general should be very moderate. It is best never to use any till after sunset.

Milk should never be drunk from dirty native vessels. One should always send one's own vessels to receive the milk direct from the animal. Sour milk carried in bottles is a good and healthy drink in very warm weather.

For expeditions the following articles of food were considered by the Germans as among the most important for Europeans: meal, rice, oatmeal, potatoes, salt, coffee, tea, cocoa, sterilized milk, butter, lard, sugar, fruit, jam, condiments such as curry, Worcester sauce, pepper, Maggi bouillon tablets, cheese, lemons.

A normal load of food-supplies for a European in the German troops before the present war consisted of :

- 24 lbs. of flour.
- 2 tins baking powder.
- 2 (1 lb.) tins of eating butter.
- 2 (1 lb.) tins of lard.
- 4 tins corned beef.
- 1 lb. salt.
- 1 packet of pepper.
- 2 lbs. coffee.
- $\frac{1}{2}$ lb. tea.
- 2 lb. sugar.
- 1 tin pease pudding (for soup).
- 1 tin oatmeal.
- 2 tins, each containing 12 Maggi bouillon tablets.
- 1 bottle Worcester sauce.
- 1 small tin curry powder.
- 1 small tin crystallized citric acid.
- 1 small tin alum.
- 1 small tin quinine.
- 6 thick candles.
- 1 packet of matches.

In Dar-es-Salaam the price of this load would be about 40 rupees.

A normal load of liquor, &c., consisted of :

- 5 bottles red wine (1 $\frac{1}{4}$ rupee each).
- 3 bottles whisky (3 rupees each).
- 1 bottle brandy (3 rupees).
- 2 or 3 bottles German champagne (2 $\frac{1}{2}$ rupees each).

6 bottles fruit syrup (1.60 rupee each).

6 small boxes sparklets and bottle.

This load would cost about 48 rupees in Dar-es-Salaam.

Three normal loads of food supplies and one normal load of liquor are supposed to be sufficient for a German in the Protectorate troops for two months when there are difficulties about getting supplies from the country. They would be supplemented by requisitions, game, and so on.

A short account of the possibilities of supply in the different administrative districts is appended. It applies, of course, to conditions before the present war. The references to war conditions are references to the state of affairs when the Germans are engaged on punitive expeditions against the natives.

1. WILHELMSTAL

Big markets are held daily at Korogwe, Makuyuni, and Mombo. At other places, such as Ngare, Mlalo, Mlola, and Shume, markets are only open on certain days. Trade in the markets consists chiefly of an exchange of provisions. Goods for exchange such as cloth, beads, &c., are unnecessary. Coined money is accepted everywhere.

Salt is obtained by the natives on the Pare mountains (Kihulio) by draining saline earth and evaporating the water obtained. Dealers also bring it up from the coast.

Plentiful supplies of food can always be obtained in Usambara ; in Pare there is some scarcity before the harvest. In the Umba and Masai steppes, food supplies are never certain, and food must be carried at all times. There is good and plentiful drinking-water in Usambara and Pare. On the Masai steppe the Pangani is the only water supply. The rain-pools, which are only known to the Wandorobbo, cannot be relied upon. In the Umba steppe, water is only to be found constantly in the Umba and the streams which form its source. On both steppes it is advisable to carry drinking-water (in all trading-centres petroleum tins of all kinds and of good capacity are obtainable, or large native clay pots).

Fuel is obtainable everywhere. Care should be taken to avoid the sacred trees of the Wapare and the ghost-trees of the W-shambaa.

The provisioning of large caravans is, as far as possible, prepared beforehand by the administrative authorities. There are no difficulties, since food can be carried to all parts of the District by rail. Provision dépôts at railway stations.

The supply of live stock for the various neighbourhoods in 1910 will be seen from the following table :

A. Live Stock of Natives (1910).

<i>Akidat.</i>	<i>Tribe.</i>	<i>Oxen.</i>	<i>Goats.</i>	<i>Sheep.</i>	<i>Pigs.</i>
Mombo	Wazeguha	12,419	13,626	18,996	—
Wilhelmstal	Washambaa	4,815	8,604	3,904	—
Bungu	and	1,756	4,201	3,048	—
Bumbuli	Wambugu	4,049	14,038	7,726	—
Wuga		3,295	6,590	2,473	—
Mlalo	Washambaa				
Mlola	and	10,259	15,702	6,896	—
	Wakamba	4,716	5,737	2,068	6
Korogwe	Wazeguha	1,380	2,437	2,283	—
Kihulio	Wapare	5,163	6,020	2,499	—

B. Live Stock of Europeans (1910).

In the whole District, 1,127 oxen ; 542 goats ; 328 sheep ; 508 pigs.

Of these, 300 pigs and 200 oxen were in Kwai, where there are a slaughter-house and a sausage and preserved meat factory.

Fisheries on the Mkomazi and the Pangani and on Lakes Manka and Komba (Lwengera Valley). Game is plentiful in the Masai and the Uмба steppes ; it is especially good in the game preserve (bounded by the District border on the N., by the Pare mountains on the E., and by the Pangani on the W. and S.).

European goods are to be found in the European and Indian shops in Korogwe, Mombo, and Wilhelmstal.

Food dépôts are not established in peace times, as food can easily be obtained by means of the railway.

2. TANGA

Markets are established in the District at Muheza, Ngomeni, Maferi, Kidage, Nyusi, Mzure, Malimba, Mwazaya, Gombero and Bamba, Bwiti and Daluni, Mtangata, Mwakidila, Mnyanjani, Amboni, Kwale, Moa, Kichakamiba, Tawalani, Pongwe, Maramba, and Mangubu.

In addition there is a market on each plantation. Dealers live chiefly in the larger coast towns and railway stations, and also on the plantations. The plantations usually keep their own stores for food and native articles. There is no bartering.

Some salt is shipped to Tanga from Arabia ; the rest comes from the Pangani valley, as salt is obtained by evaporation in the Shihiri settlements. The Wadigo of the District also sell salt, which they obtain from evaporation of the sea-water.

Throughout the District plenty of food-stuffs and drinking-water are to be had, even for large caravans. Care must be exercised with regard to the drinking-water, on account of the prevalence of helminthiasis. There is a shortage only on the Uмба steppe, where it is necessary to take food and water with one. There is plenty of fuel everywhere. Spirit trees and sacred groves, which must be spared, are found among the Washambaa.

Game is only to be found on the Uмба steppe (due N. of Gombero).

All European articles can be obtained in Tanga ; preserved goods and beverages in Amani, Muheza, Kihuhui, and Nyusi. Salt, meal, rice, petroleum, groceries can be bought in nearly all places where there are dealers.

Fresh supplies of all kinds can be quickly procured *via* the Usambara railway.

There are no food dépôts. The supplies on the plantations and with the dealers can support a large number of people for a long time.

3. PANGANI

Regular markets in Pangani, Handeni, Mkwaja (coast), Madanga (near Bushirihof). Money preferred everywhere. Articles of barter unnecessary even in the interior. Prices moderate in Uzeguha and Nguru, high in Bondeiland and on the coast, owing to the numerous European settlements and their needs.

Provisions in Nguru and Uzeguha generally scarce before the harvest after a poor rainy season. Provisioning of large caravans for long periods difficult in this district. Drinking-water conditions bad in Uzeguha and in the Masai steppe, elsewhere good. In Pangani built wells. Water in Uzeguha (except in Msangasi river) saline ; it is drawn from water-holes, and is flat, dirty, and unsuitable for Europeans. Good boiled water should be carried. Transport in tins and in native jars. Plenty of fuel. Sacred trees and groves, which must be spared, are numerous.

Game useful for food is found in the grass steppes of the coast tracts, on the Gendagenda mountain, and N. of the road Sindeni-Handeni-Mgera (Masai steppe).

Europeans obtain articles for their use from Pangani or from Tanga by the Usambara railway. Also additional supplies for large caravans come from the coast in this way.

4. BAGAMOYO

Markets in Bagamoyo and Saadani. Smaller markets in the larger coast towns and on the caravan roads. Traders and stores are found according to the significance, size, and importance of the places. Payments are made in money. Barter is not practised. Salt is produced by natives on the coast, and is also imported from Arabia. Provisions are very scarce just before the harvest; only in central Nguru is there always plenty of provisions. Prices moderate in the interior, high on the coast.

Drinking-water conditions are not very favourable in the District. At Bagamoyo are walled wells. The Kingani, Wami, and the rivers in the Nguru mountains have always good drinking-water. The other rivers and streams dry up. Water is also drawn from dug water-holes which are often $\frac{1}{2}$ –1 hour distant from the village. This water is generally dirty, sometimes brackish, hardly drinkable by Europeans, and often dangerous to health. Europeans are therefore advised to carry good boiled water with them. On the march from Nguru to Uluguru the Wami is the only place where water can be got. Fuel is to be found everywhere. Sacred trees and groves dedicated to the dead must not be touched; they are only found here and there.

Large caravans can only be supplied for a short time in the interior. During risings supplies must be requisitioned; in peace time it is better to order them beforehand through the authorities. A part of the supplies must be brought from the coast or from the railway-line.

The live stock in the District is distributed in the following way among the Akidats.

Live Stock (1910)

<i>Akidat.</i>	<i>Oxen.</i>	<i>Goats.</i>	<i>Sheep.</i>	<i>Pigs.</i>	<i>Donkeys.</i>	<i>Mules.</i>
1. Bagamoyo town . . .	155	128	—	—	72	4
2. Saadani . . .	496	135	—	—	46	—
3. West Nguru . . .	305	1,355	650	—	10	—
4. East Nguru . . .	194	1,253	830	11	40	—
5. Lutewa . . .	—	292	345	—	—	—
6. Pongwe . . .	180	770	410	—	22	—
7. Rosaco . . .	296	305	322	—	8	—
8. Winde . . .	197	209	134	—	—	—
9. Kiscwo . . .	7	340	243	—	—	—
10. Kavle . . .	84	676	70	—	39	—
11. Miono . . .	1,561	1,077	—	—	22	—
12. Kipindu and Bwewe .	3,169	1,498	—	—	17	—
Total . . .	6,644	8,038	3,004	11	276	4

Game, such as can be taken into account for food, is found on the Wami. Antelopes in Uzeguha and Ukwere. Much game on the Wami between the Liwale and Mkata. It is possible to shoot game only after the very high grass has been burnt down.

Supplies of European articles in Bagamoyo and Saadani. These places are the most convenient bases for troops. A force operating in N. of the District can be supplied by the Tanga railway.

There are no supply dépôts, but supplies can be had in any quantity in Bagamoyo and Saadani.

5. MOROGORO

Throughout the whole District there are no difficulties of supply even for large caravans. If a scarcity of provisions should occur in Morogoro or Kilosa shortly before the harvest, owing to the number of workers on the plantations, provisions can easily be sent up by rail from the coast.

Public market-places are only to be found in the bigger places on the Central Railway.

Water conditions are everywhere very favourable. There are no waterless tracts. Fuel can be obtained everywhere.

Plenty of game in the Mkata steppe and near Kisaki. European articles can be obtained in the European stores in Morogoro and Kilosa. The Indians also, in these places and in Kisaki, generally keep preserved foods, beer, and mineral waters.

6. DAR-ES-SALAAM

The market in Dar-es-Salaam is amply stocked: the former market in Kisiju is closed.

The harvests are usually good. Money is taken everywhere; articles for barter are not necessary.

Salt is not found in the District. Drinking-water is easily to be got in the rainy season. In the dry season water is only obtained with great difficulty, especially on the line Pugu-Maneromango-Wikumbula-Mkamba. Europeans should carry casks or water-bottles with them, so as to be provided with good water for a few days. Large caravans are forced to take provisions with them and to arrange for regular forwarding of fresh supplies, as sufficient provisions are not to be got in certain parts of the District. Game cannot be reckoned on. European articles are obtained in Dar-es-Salaam.

7. RUFIJI

In 1910 well-stocked market in Mohoro, poorly stocked markets in Kikale and Msindaji. Chief market probably now at Utete, the capital of the District. Meat is nowhere offered for sale. Large Indian settlements in Mohoro, Kikale, Msindaji, Ndundu, Kowoni, Mtanza.

Live Stock (1910)

1. Native

<i>Akidat.</i>	<i>Oxen.</i>	<i>Cows.</i>	<i>Bulls.</i>	<i>Donkeys.</i>	<i>Sheep.</i>	<i>Goats.</i>	<i>Pigs.</i>
Kowoni	—	—	—	—	69	99	—
Mayenge	—	—	—	—	69	99	—
Ndundu	6	28	6	—	32	6	—
Kikale	10	90	5	—	53	207	—
Msindaji	—	—	—	—	17	132	—
Mohoro	40	25	11	7	323	1,219	—
Total	56	143	22	7	563	1,762	—

2. Europeans

<i>Akidat.</i>	<i>Oxen.</i>	<i>Cows.</i>	<i>Bulls.</i>	<i>Donkeys.</i>	<i>Sheep.</i>	<i>Goats.</i>	<i>Pigs.</i>
Kingwagwanda . . .	40	4	1	3	—	6	—
Bingo	18	19	8	—	5	12	—
Utunge	4	2	—	—	—	—	—
Kindunguru	2	2	—	—	10	10	—
Mpanganya	22	4	4	2	40	25	8
Mgohori	2	8	4	—	6	10	—
Logeloge	10	20	10	18	50	50	—
Sombe	15	10	10	—	—	—	—
Tindwa	4	6	6	—	10	10	—
District Head-quarters	5	32	4	3	7	—	—
Total	122	107	47	26	128	123	8
Native live stock .	56	143	22	7	563	1,762	—
Collective total . .	178	250	69	33	691	1,885	8

Articles of barter are not necessary. Salt is obtained on the coast by evaporating sea-water, especially in Kyomboni, Msindaji, and Kyasi.

In normal years provisions can be obtained with little difficulty from February to August : after that they very soon become scarce,

for the natives quickly consume or dispose of their harvest. Only the Rufiji plain has a fair amount of provisions for the whole year through. Great lack of provisions prevails after August in the Matumbi and Kichi mountains, and W. of them in the uninhabited steppes. It is the same W. of the Magongo mountain chain as far as the uninhabited spurs of the Uluguru mountains. Provisions must always be carried here.

Large quantities of game can be taken into account for supply in the following districts: 1 hr. N. and S. of the Rufiji where the grass steppe passes into savanna; 3 to 5 hours W. of Mohoro; W. of the Kichi mountains in the game reserve (W. corner of the District, N. of the Rufiji and W. of the Msangasi): S. of the game reserve on the Rufiji and its southern tributaries.

Large caravans can only be supplied with certainty by arranging dépôts on the coast and on the Rufiji and getting additional supplies sent on from there. Kikale and Msindaji are sources of supply for the mountain country. For the other parts of the District supply is best effected by the Rufiji or by one of its delta arms.

The conditions for obtaining drinking-water are not favourable. The Rufiji is salt from the Bumba arm downwards, and is infected up-stream with helminthiasis. The spring water on the delta islands is brackish, hardly drinkable by Europeans. The Mohoro is salt at Mohoro station. The spring water at Mohoro is brackish. The water of the Luhohi contains soda, as do all the lakes N. of the Rufiji. The lack of water in the neighbourhood of the mountains is mentioned on p. 132. The following routes must be regarded as waterless in the dry season: Kiane-Ndonde Repa, Kiane-Mibaba, Mtanza-Mibaba, Mroka-Kisangire.

Behobebo is the only watering-place between Kibambawe and Kiderengwa. There is no water between Kisangire and the Rufiji in the dry season.

From December to July there is plenty of water to be had everywhere, provided that the lesser rains have fallen plentifully in December.

Fuel is to be found everywhere except on the Rufiji plain, where grass must be burnt. The trees on the graves are considered holy by the natives and must be spared.

European goods are obtainable from the Indians at Mohoro in limited quantities. They are best brought by sea from Dar-es-Salaam.

There are no supply dépôts anywhere in peace time. The Indian traders keep a certain quantity of stores.

8. KILWA

Market at Kilwa ; provisions easily obtained ; Indian shops at Kilwa, Kilwa Kisiwani, Zamanga Ndumbo, Kibata, Ukuli (one hour from Langanra plantation), Kiswere, Yingo. Plenty of supplies (maize, millet, rice) at Yingo, Mchakama (under the Akida of Mavuji), Kiswere, Nakihu, Madaba. Limited and very expensive supply in Liwale. On the whole supplies are cheaper inland than on the coast. Few inhabitants and little supply on the caravan route to Songea.

Live Stock (1910)

<i>Akidat.</i>	<i>Oxen.</i>		<i>Sheep.</i>	<i>Goats.</i>	<i>Pigs.</i>	<i>Camels.</i>	<i>Donkeys.</i>
	<i>Larger animals.</i>	<i>Calves.</i>					
Kilwa	147	25	60	182	•36	7	42
Upururu	20	—	—	240	—	—	—
Mpara	4	2	—	39	—	—	—
Kisiwani	77	19	66	325	—	—	—
Lake Songo	—	—	40	500	—	—	—
Madaba	—	—	—	11	—	—	—
Mariwe	4	4	7	632	—	—	—
Nakihu	—	—	—	19	—	—	—
Kiswere	2	2	17	44	—	—	—
Mavuji	—	—	15	—	—	—	—
Chole	3,839	1,224	101	249	—	—	73
Kibata	16	3	—	116	—	—	1
Liwale	47	45	16	20	7	—	—
Total	4,156	1,324	322	2,377	43	7	116

Articles of barter are not in use. The favourite currency is : the 25 heller piece, the 10 heller piece, the single heller. 5 heller pieces and half heller are not liked. Silver money is preferred to copper.

Salt is got on the Matandu and the creeks on the coast, and can be procured at the market and in the Indian shops. When the harvest is good, there is no special shortage of indigenous products before the next harvest (maize harvest in February, millet (*mtama*) harvest in June and July, maize harvest in August and also manioc, peas, beans, cucumbers, and gourds).

The conditions for getting drinking-water are everywhere unfavourable in the dry season. Waterless stretches are : the route from Yingo to Madaba *via* Nambaniye ; the route from Ngarambi

(W. side of the Matumbi mountains) to Madaba *via* Lukulilwa (Miliwiliwi pool dried up); the route from Nmira *via* Mbembetu (the best way is to turn N. from Kumula *via* Nambunyu to Mitumbate on the Liwale road). On the Liwale road at the beginning of 1910 many cemented wells, 9 to 13 ft. deep, were sunk. Empty petroleum tins should be taken. Europeans take boiled water with them in bottles. There is water between Madaba and Luwegu in deep holes.

Fuel can easily be procured in the bush.

Large caravans can obtain provisions in Kilwa (Indian stores, German firms), Yingo, Mchakama, Kibata, Kiswere.

Game is plentiful on the coast, on the rivers, and on the Lungonya steppe in the dry season, and in the rains is found here and there in the Pori (high grass).

European firms in Kilwa and one in Liwale supply all necessities for Europeans: Indian establishments in Kilwa, Zamanga, Ukuli Kiswere, supply sugar, meal, potatoes (Kilwa), salt, rice, onions, petroleum, soap, lamps. As a rule the Indians and the European firms keep large stocks, even in years of shortage. There are dépôts at the *Bomas* in Kilwa, Liwale, and Madaba.

9. LINDI

Markets in the coast towns of Lindi, Mchinga, Mikindani, and Zudi; markets generally well stocked. Indian and Swahili merchants found in all coast places and in the neighbourhood of all plantations, also in Newala. Cereals in sufficiency till December; scarce in January and February. Maize ripens in March; bad harvests seldom occur, but the people in the interior do not get rid of their millet, as too small a price is offered; it is used mostly to prepare native beer. The import of rice from Bombay lowers the price of millet very considerably.

Cattle scarcely to be obtained; some of the chief men among the Wayao have a few oxen; a few sheep and goats on the coast. Money taken everywhere, in the interior only in small pieces up to 10 heller. Articles of exchange not necessary. High prices are paid on the coast, lower ones in the interior.

Salt obtained in Zudi and in Masasi, but only for native use; this salt does not come on the market. The Wayao get it out of the bark of a tree called *muha* in their language. Salt can be procured in plenty in the interior, as the natives when they visit the coast always bring back a load or two.

Drinking-water conditions good in the District. Even in the

dry season water is generally to be found every 4 or 5 hours. Only in the Makonde highland are there tracts with no water for 15 hours ; here water must be carried in water-bags or tins. Europeans are advised to take water-bags so as to be able to carry good water with them.

Plenty of fuel everywhere.

Plenty of game on the upper Mbemkuru and in the region of its sources and the whole adjoining region of the Muhuwezi ; also near the Bangala sources and in the Rovuma plain ; scattered herds near Masasi and on the Lukuledi down to Mtama. The Makonde highland is poor in game ; in the Mwera plateau some migratory game.

With large caravans it is necessary to arrange through the civil head-quarters of the District for supplies, with porters to carry them, to be brought to an appointed place by an Akida. There the supplies should be counted and paid for. Provision porters are given ration-money daily, but are paid only when they are dismissed, as they desert as soon as they get any pay. It is necessary to reckon the supply in such a way that in uninhabited districts the provision carriers can receive at least 1 *kibaba* daily from the supplies carried. 'In inhabited districts tell the Jumbes beforehand to bring up the necessary supplies, buy them up, then sell them to the Askari and porters, and so avoid unpleasantness with the population.'

Provisions and carriers must be ordered at Mnero near Ilulu for the uninhabited region of the (Muhuwezi) Mohezi and Mtetesi ; for the region of the Bangala and Lukuledi sources, at Mnero or in some cases Masasi ; for a part of the Songea road from Masasi to the villages of the Jumbe Katewere (1910), at one of these two localities.

European articles can be obtained from Lindi, Mikindani, and Dar-es-Salaam. Planters get them principally from Lindi. Indians on the coast and in the neighbourhood of the plantations and in Newala have meal, sugar, salt, cigarettes, petroleum, &c. Famine years are rare. January and February are the months when supplies are scarcest before the maize-harvest in March. The Mbemkuru region, the villages of the Jumbe Katewere, and the Lukuledi valley can provide for other parts.

10. SONGEA (Wiedhafen sub-district not included)

There is a market only at Songea station. Payment is made in money. Salt is the most valuable article of barter. It is imported into the District from the coast.

Scarcity of provisions is to be met with in all parts of the District before harvest time.

The supply of drinking-water is good throughout. If in certain cases (as, for example, between Rutukira and Chabruma's village) there is no water on the route for some hours, water can generally be obtained by turning aside into the nearest valley. Running water is to be found almost everywhere; in Matumbi alone is there a great deal of marsh.

There is plenty of fuel everywhere. Sacred trees are not found in this District.

Food supplies for large caravans present no difficulties in years when the harvest is good. But time must be allowed for bringing up provisions in certain districts, as the people live fairly far apart.

Game is found : (a) on the Rovuma, on the Portuguese frontier (where the grass is burnt in the middle of August); (b) on the Rutukira some way below its junction with the Hanga, and on the Ruhuhu (grass fires begin at the end of September); (c) on the Lukimwa up to the mouth of the Nyuga.

Buffaloes are found in some river valleys (Likonde, Rovuma), in the Matogoro mountains, in Matengo, Ubena, Upangwa, in the tropical forests and in Matumbi. They move about considerably. Elephants are found principally in the SE. of the District.

It was only on the Rovuma that a company of Protectorate troops (before the present war about 600 men including porters) could rely on provisioning itself for several days on game if the grass was well burnt. There are many hippopotami in the Rovuma and the Ruhuhu, and pig everywhere.

European goods may be obtained in very limited quantities in Songea. They are best obtained by way of Kilwa. There are no provision dépôts.

11. LANGENBURG (including Wiedhafen sub-district, now attached to Songea)

Large markets in Neu-Langenbourg, and in Mwaya (at least in 1910, when Mwaya was still a sub-district post), smaller at Masoko, Itaka, Mwakete, Wiedhafen; traders only at the stations and places near them and with the 5th Company.

Natives get salt from the many hot salt springs (unpalatable to Europeans).

Peas and beans are always to be got in plenty on the highlands and are very cheap. They do not come on the market.

Supplies are scarce on the Nyasa coast from Alt-Langen-

burg to the Portuguese frontier, also in Lower Uzafua and on the Rukwa lake. The Nyasa-Tanganyika road west of Igale Pass has not sufficient supplies for 30-40 men. Provisions must be carried from Langenburg. Arrange dépôts at Itaka, and on the river Saisi, for big caravans. Considerable abundance of large cattle and cereals of every kind in the Rungwe crater.

Difficulties with regard to water occur in the Rukwa steppe and on the Tanganyika plateau, but are not great.

Fuel everywhere. Plenty of provisions at any time in Kondeland and all the mountain regions.

Game for purposes of supply can be looked for only in the vicinity of Lake Rukwa and in Lower Kondeland.

For provisioning of very big caravans previous notification should be sent to the District posts.

European articles can be got sometimes in Neu-Langenburg and at the Kyimbila mission. Very high prices.

12 and 13. BISMARCKBURG and UJJI

Large markets at Ujiji and Bismarckburg. Also at several places in Uha (Kasulo Market). Market hours in Uha, 9-12 a.m. 'At the approach of Europeans there is often a general flight.' Smaller markets on the caravan-routes, but not sufficient for large caravans. Money is taken in Uha. The favourite article of exchange is salt, after that cloths and blankets.

Salt is obtained in Uwinza. There are many salt springs scattered over the whole District, specially numerous near Ruchugi. The Wawinza are familiar with the process of gaining salt by evaporation. The Gottorp salt-works alone have the right of obtaining salt (1 kihiga (16 German pounds) costs 1 rupee). Salt is obtained also at Uyungu.

In Uha, Ufipa, and Urungu there are crops and vegetables sufficient to provision large caravans at all times. In Uwinza large caravans must always reckon on difficulties in provisioning, and small ones before the harvest. In Ukawende and Ugalla even small caravans must take provisions with them at all times. Game may be taken into account for supply only in the plain of Lake Rukwa and in Uwinza.

There is a small provision dépôt at Bismarckburg. At Ujiji reasonable quantities of provisions can be obtained at all times, and they can also be brought by steamer. The 6th Company at Ujiji also possesses a commissariat dépôt, where a month's provisions (rice) for the Company are stored. European goods can be had in

Ujiji and Bismarckburg. Rice, meal, salt, sugar, petroleum, &c. are also kept in the smaller trading centres like Ruchugi. Extra supplies can be obtained from Tabora or by steamer from other places on the lake.

14. TABORA

There are large markets in Tabora and Shinyanga, and smaller ones at the camping grounds on the caravan roads. The latter are poorly stocked. Meat generally cannot be obtained. Fish is rare. The principal articles of food are poultry, millet, sweet potatoes, and manioc. The latter are preserved from November till February. Provisions, including cattle, sheep, and goats, can be requisitioned for fairly large bodies of troops.

In the town of Tabora there are good walled wells, otherwise the drinking-water supply for the whole District leaves much to be desired. Running streams are not to be found in the dry season. In consequence of drought (which has lasted in some cases for several years) the underground water-level sometimes sinks so low that many wells dry up. The cistern water is dirty and almost undrinkable (it is only possible to purify it with large quantities of alum). It is advisable to bring drinking-water in petroleum tins from places where the water is better. Good drinking-water ought to be obtainable everywhere by boring.

Fuel is easily obtainable everywhere. Large quantities of game cannot be counted on for food.

European articles are to be got in Tabora (German East African Company's dépôt and many Indians). Additional supplies can be brought up quickly from Mwanza and by the Central railway. There are no provision dépôts anywhere.

15. DODOMA

Markets are established in Dodoma, Kilimatinde, Singida, Mpapwa, and on the railway. They are relatively well stocked. Settlements of storekeepers are to be found at the seats of administration and on the railway. Cereals only last out till October in the markets after a normal harvest; after that, insufficient till the new harvest. In very dry years, the harvest is not sufficient for the needs of the natives. The market of Singida is supplied from Turu, where bad harvests are the exception. There are great quantities of live stock, but prices are high in consequence of the building of the railway. Rice from Usukuma and Unyamwezi

can be bought from the traders at high prices. Money taken everywhere.

Salt is obtained in many places in the District, partly from the salt crystals in the salt lakes during the dry season, partly from soil which contains salt, e.g. from Wembere steppe, the Singida lake, the Bubu marsh and Mwumi in East Ugogo. The brackish water lakes in and near Turu have inexhaustible supplies of salt.

Drinking-water conditions are very bad in the whole District. Water is generally muddy and unpleasant, and is often as much as an hour distant from villages and camps. It is obtained from water-holes and also from most of the sandy river beds. Natural cisterns in the deep rocky holes of some river beds contain water till far on in the dry period. Europeans had better carry boiled water for some days from the better watering-places. In some places in the dry period there is no water for distances of fourteen hours. Water is carried in tins or native vessels. The water-supply is especially bad in Ugogo, where the water is muddy and warm and generally contains salt or soda. The following tracts are quite waterless: the Marenga-mkali (see p. 150) W. of Mpapwa (9 hours for porters), Mpapwa-Kidete (8 hours).

Firewood everywhere.

On the route Kilimatinde-Tabora great difficulty in getting food supplies: settlements few and small: live stock not to be found on account of tsetse: isolated herds of game found near road from 3 days' march out of Kilimatinde to the boundary of the Tabora District. By Lake Chaya are large herds of game. Ukimba and S. Ugogo are poor in cattle, &c., but have some game. This applies also to the neighbourhood of the Mponde marshes between Turu, Usandawi, and N. Ugogo. Europeans get most articles they need from the coast and from a branch of a coast firm in Dodoma. The European and Indian stores generally keep meal, sugar, salt, petroleum, &c. In famine years Kilimatinde gets corn from Turu. Provision dépôts at stations and posts are generally filled from the harvest till February. Harvest in May and June.

16. KONDOA IRANGI

Large markets in Kondoa Irangi, Mkalama, and Zekenke; smaller ones here and there on the caravan roads. Money is understood and taken everywhere.

Rice is cultivated only in Nguru (on the border of the District), and is brought also by caravans from Tabora to Kondoa. Salt is

got from Lakes Balangda, Balangidda, and Eyasi, and also from the Wembere steppe.

Loads of provisions must be carried at every season to the Masai steppe and for expeditions into the uninhabited parts of the Gurui mountains. Shortly before harvest time there is a want of provisions everywhere. In the other months the supplies of the country are sufficient for moderately large caravans.

Conditions as regards drinking-water are particularly unfavourable in the Masai steppe. During the dry season the greater part of the watering-places become dry. In the Masai steppe water is frequently found up in the hills in artificial holes in the rocks, which are often very deep, or in small springs, the water of which does not reach the foot of the mountains. When searching for water, follow the narrow Masai paths, or the cattle tracks, which lead mostly to water or to a kraal. Europeans are advised to take good drinking-water in petroleum tins or gourds with them, filled with water from the best watering-places. Absolutely waterless tracts are the Buyuni-Kijungu (12 hours), and Kibaya-Mrijo (8 hours). These two tracts are on the road Kondoa-Korogwe.

Firewood everywhere. Sacred groves and trees are not found. Sufficient game for provisioning is found in the Masai steppe and in the uninhabited parts round the Gurui mountains.

In provisioning larger caravans it is necessary to order beforehand. Supplies may have to be obtained from Turu, from Tabora, or from the coast by railway. In years of scarcity Mkalama and Zekenke get corn from Usukuma, Unyamwezi, and in case of need from Iraku.

Meal, petroleum, lights, preserves are to be procured from the non-European merchants in Kondoa. Supply dépôts are not established anywhere in peace time.

17 AND 18. MOSHI AND ARUSHA

There are markets in Moshi, Arusha, Iraku, and at various points on the much-frequented caravan routes. In normal years there are plentiful supplies throughout the year; after bad harvests supplies are scanty; in the flat country there is also little to be had at these times. There are always supplies of bananas on Mt. Kilimanjaro, on Mt. Meru, and on the Pare mountains. In the dry Ubugwe there are frequent famines; in Iraku, as a rule, plentiful harvests. In the Masai steppe no cereals are to be had, except at Engaruka, a small settlement of cultivators, and Sonyo, on the north-western

frontier of the province. On European farms in good years home-grown cereals are to be obtained in fairly large quantities. At times, dealers have large numbers of all kinds of live stock. Prices, except in Iraku, are very high. In Ngorongoro is the stock farm of the brothers Siedentopf.

Good supplies of drinking-water are to be obtained on Kilimanjaro, Meru, the Pare mountains, in Iraku, and Ngorongoro; there are numerous perennial water-courses and springs everywhere. In mid and northern Ubugwe are deep water-holes with slightly brackish water; in S. Ubugwe, two perennial streams. In the plains a few scattered places where water may be obtained from deep rocky holes, generally known only to the Masai and the Wandorobbo. Water is often entirely wanting at the end of the dry season. Before every march, fresh detailed information should be obtained. Stretches of twenty-hours' march without water are not unusual.

Among waterless stretches are: Longido-Sheep Hill (17 m.): Sheep Hill-Ngare Nairobi (17 m.).

Wood for fuel is scarce in the Masai plain, but plentiful elsewhere. Great caravans suffer much from this dearth of water, wood, and cereals. Large quantities should be taken.

Throughout the plains are large quantities of game. The animals are tame since the Masai do not hunt. In the Ngorongoro crater are many hundreds of antelopes.

Europeans can obtain all goods from the shops in Moshi and Arusha.

19. MWANZA.

There is a large market in Mwanza, and smaller ones at Shirati, at Nyawangi on Mara Bay, at Misungi and Bukumbi on the Tabora road, and at Nyantelesa on Smith Sound.

Coloured traders are to be met with in many places, which mostly lie on the most important lines of communication. On these too there are smaller food markets of local importance. Such places are:

In the part of the District administered directly from Mwanza:

in Usukuma	Kayenze and Nyanguge
„ Magu	Kahangara
„ Nasa	Burima
„ Shiyaki	Guta
„ Uzmao	Nyanbiti
„ Nera	Mabuhi, Runere, Ilula

in Nhunghu	Shano
„ Magalla	Nyazato and Lalago
„ Ntusu	Makawindi
„ Itilima	Lugulu
„ Ukerewe	Myebe and Multanga
„ Msalala Mdogo	Mohango
„ Uzinja	Sultanate Bukole : Nyamizwi
	„ Butundwe : Bukondo
	„ Buhoza : Kamisa

In the Shirati sub-district : at Shirati, Nyawangi, Mayuta, Bwai, Shawantele, Ikisu, and Nyamatoke. In the Ikoma sub-district : at Ikoma.

Just before the new harvest, and in the neighbourhood of the larger places, prices of foodstuffs are higher than usual. At the time of the collection of taxes live stock is cheap.

Articles for exchange are not needed. Everywhere in the District money is current. Salt is mostly fetched from the (Eyasi) Nyaraza Lake, and is an article of commerce. The salt found in Ushashi and in the Zerengeti is not palatable to Europeans.

Foodstuffs are scanty in Uzinja. On expeditions additional supplies from Mwanza would be needed. In Ikoma also there are very few cereals or vegetables. For a march into the Masai desert, east of Ikoma, supply loads, which are most easily got in Usukuma or in Ushashi, west of Ikoma, are indispensable. It is wise to take rice from Mwanza. In the other parts of the District food-stuffs are always obtainable.

The provision of drinking-water is a difficulty in the Masai steppe. It is nearly always necessary to take empty petroleum tins with a caravan from Mwanza or Shirati (test beforehand whether water-tight). Water must in some places be carried for 2-3 days. Waterless tracts are Ikoma-Olgoss: Sonyo-Engaruka: Engaruka-Arusha: Zerengeti.

Fuel everywhere. In the case of large caravans it is desirable to acquire information beforehand about supplies at the centres of administration. Many kinds of game are of importance for supply in the Masai desert. Cattle can only be got from the Masai and Wandorobbo by force. The harvest occurs in May and June.

European goods are obtainable to some extent in Mwanza and also in Shirati. Additional supplies are got quickly from the coast by the Uganda line. Meal, sugar, salt, and petroleum are almost always to be had in the above-mentioned trading stations.

20. IRINGA

A well-stocked market is to be found only at the Iringa station. The natives produce on the whole very little more than enough to meet their own needs. They cultivate chiefly the traditional plants of the negro, to which has been lately added the European potato. In dry years the harvest does not suffice for the needs of the natives; they buy extra supplies, generally in exchange for cattle, e. g. rice from the Ulanga plain and wheat from Ukinga.

There is plenty of live stock, but the price for cattle is pretty high, and the owners part unwillingly with their stock and only in times of want. Money is taken everywhere.

Little salt is produced in the District. It is obtained from saline soil in N. Ubena and Ugogo.

The conditions as regards drinking-water are in the centre, NE., and SE. very favourable (clear, flowing water everywhere); in Usangu adequate (water always to be had a day's march away); in NW. bad in parts (sometimes a double day's march is needed to reach it). Waterless stretches for which it is necessary to carry large supplies, do not occur.

Fuel is to be obtained everywhere.

Plenty of game to be found in the zone of the Great Ruaha and its river system (elephants, rhinoceroses, hippopotami, giraffes, zebras, antelopes, occasional buffalo and waterbucks; pig everywhere). As regards game the District can be divided roughly into two halves, the boundary falling nearly exactly on the road Kilosa-Iringa-Malangali-Kidugala. NW. of this line the country is rich in game, SE. quite poor.

For large operations the following may serve as a guide. The means of provisioning are, after normal harvests, for:

The centre: everywhere adequate;

NE.: adequate on the Kilosa-Mahenge road and the Mahenge boundary, otherwise moderate;

SE.: poor generally: in the mission neighbourhood and at the Ubena post adequate;

SW.: (Usangu) adequate on the big roads, otherwise moderate;

NW.: poor even on the roads to Mpapwa and Kilimatinde, elsewhere few or none.

Everywhere large quantities of live stock except in the NW., in S. Ubena, and in S. Utzungwe.

Even in time of war, after a normal harvest, the District is capable of supplying detachments of troops for a considerable time.

Europeans get necessities direct from the coast. The Indian

stores generally have meal, sugar, salt, petroleum, and small stocks of preserved goods.

In years of shortage, Langenburg and Mahenge supply the District with corn.

The dépôts of the administrative stations and posts, and missions, are generally well supplied from the harvest till February.

21. MAHENGE

In Mahenge there is a market, relatively well stocked. Provision-dealers are found in nearly all the larger native places. Money is accepted everywhere. Salt is imported mainly from the coast.

The District is very rich in foodstuffs, especially in rice. In times of peace and even in war, under normal conditions, difficulties of supply are only to be anticipated after a very bad harvest. The District is poor in live stock.

There is a sufficient water-supply even in the dry season. At the worst water can be obtained by digging in the river-beds. Europeans should take with them boiled water from the better watering-places sufficient for several days. Fuel is to be had everywhere.

In the southern part of the District large caravans will find it necessary to take supplies with them.

All over the plains game is abundant, especially on the Ulanga and Lochombero plains.

Most necessary articles are obtained by Europeans from the coast. The Indian stores usually keep flour, sugar, salt, petroleum, &c.

The Company of Protectorate Troops stationed here possesses a provision dépôt with sufficient food for the Company for 6 weeks. In the event of mobilization, the amount could easily be increased.

22. BUKOBA

In stations, residences of Sultans, and a few other places like Kamachumo and Katoke, markets are to be found where provisions can be bought and traders (Arabs and Indians) live. Money is taken everywhere, so that articles for barter are unnecessary. Salt comes from Uganda, Uzumbura, or Ujiji, or is got by extraction from salt soils. After a bad harvest there is likely to be a shortage of provisions a little while before the next harvest.

Drinking-water can be got everywhere, but is not always good. Waterless stretches are found in the dry season only in SW. Karagwe (Bugufi Ferry-Nyakahanga road). Large gourds are used for carrying water.

Fuel is to be had everywhere. Sacred groves and trees in the neighbourhood of Sultans' residences, and also the group of sacred trees in each village, must be spared.

Large caravans can be supplied without difficulty from the country in normal years. In Karagwe there are less possibilities of supply, and additional supplies must be procured from other sultanates in case of need. Rice is brought from Mwanza in times of scarcity.

Plenty of game for supply is found on the Kagera E. and W. of Kifumbiro; by Lakes Urigi and Ikimba; in Uhimba; on Emin Pasha Bay and in its hinterland.

Salt, meal, rice, petroleum, drinks and preserved foods can be got in Bukoba, and, except the last, from the merchants in the interior; otherwise they are obtained from Mwanza and Entebbe.

23. RUANDA

There are no markets in Ruanda where European caravans can provision themselves. Supplies are requisitioned from the Sultans, and brought by them into camp. Either pay the Sultan for the total or pay each person who sends in supplies. Sometimes also the Sultan is paid for the live stock, and the Wahutu for the cereals which they deliver. Payment in money is confined to the immediate vicinity of the Residency and the administrative posts. Everywhere else the system of barter prevails. Cloth and beads are the most useful articles of barter. (Find out from the dealers in Bukoba and Uzumbura what kinds are preferred at the time.)

There is very little consumption of salt. It is imported from Uzumbura to the Kivu, from Bukoba to Kigali, from Katwe on Lake Albert Edward to Mpororo,—in all cases in small quantities. Salt is obtained by the natives by burning reeds, &c.

If the rainy season fails, there is often a scarcity of provisions in Mpororo, in the district to the NE. of Lake Mohazi, in Kisaka, in the neighbourhood of Kigali and in the middle of Ruanda generally.

As a rule, foodstuffs are cultivated only for the owner's use; beyond this, for purposes of barter, only in the high mountain lands and in the Lava district.

The drinking-water supply is good everywhere, with the exception of the following localities: the steppe lands to the W. of the Kagera, in Bugesera, and on the slopes of the volcanoes.

Fuel is very rare throughout. It must be bought like provisions. Grass and cowdung have often to take the place of wood. There are

many sacred trees and groves, dedicated to the dead, which must be spared.

Provisions for large caravans are in times of peace to be asked for—advisably several days beforehand—from the Sultans through the administrative officials. In times of war, provisions must be obtained by requisitioning. Supplies of live stock are always sufficient.

Game can only be reckoned on as food in E. Mpororo and on the steppes to the W. of the Kagera.

European goods are to be had in Bukoba and Uzumbura. Additional supply of all kinds can most easily be got *via* Bukoba from the Uganda Railway.

There are no provision dépôts. Provisions, e. g. rice, can easily be brought from Bukoba and Uzumbura. The expense of transport is heavy.

24. URUNDI

At the market in Uzumbura there is always a plentiful supply of all provisions. Meat is dear. On the Tanganyika coasts, in the Rand Mountains, and in the Rusisi plain there are numerous markets. In the highlands markets few and widely scattered. There are no fixed prices.

In 1910 money was known only at Uzumbura and its immediate neighbourhood (probably accepted now at Gitega, the new capital of the District). In the country, articles of barter are used, such as small crimson beads (*samsam*), long-shaped black or crimson beads with black markings (*ganga*), red woollen blankets, different sorts of cotton cloths, and brass or copper wire. Salt comes from Ujiji at 2 rupees for about 16 lb. It is hardly possible that there should be any severe famine in this country.

There are practically no difficulties whatever in obtaining drinking-water in Urundi. Fuel is in most districts more difficult to obtain than food-stuffs. In war time, huts and the fences round cattle-kraals make good material for burning. Sacred groves must be spared.

Difficulties of provisioning in war time are improbable even for considerable detachments. In peace time, there is still often passive opposition; it is advisable to send inhabitants of the villages ahead to make arrangements. The Watwale (chiefs) are responsible for producing supplies; the people bringing them are paid individually. The chief receives only a small present. With regard to supplies, it must be remembered that the Warundi (whether porters, or

auxiliaries in war) eat beef only among flesh-foods. Game cannot be counted on as a means of subsistence, as it is only found in small quantities in the virgin forests and on Lake Rugwero.

Most of the goods necessary for Europeans can be had at Uzumbura. In case of need, additional supplies can be obtained from Ujiji, e. g. rice. Dépôts for peace time are not necessary. In the event of war, the Germans expected to use, apart from Uzumbura, the camps for sleeping sickness situated on the coast, and, in certain circumstances, the Missions Muyaga, Rugali, and Kaninya (these last for troops coming from Ruanda, Bukoba, or Tabora).

CHAPTER X

RAILWAYS, WATERWAYS, TELEGRAPHS, ETC.

RAILWAYS

THE following railways have been completed :

(1) The **Northern Railway**, starting from **Tanga**, and running inland in a north-westerly direction up the Pangani valley, roughly parallel to the frontier of British East Africa, into the Kilimanjaro hill-country (terminus, **New-Moshi**, 222 miles).

(2) The **Central Railway**, starting from **Dar-es-Salaam**, and running nearly due west (a little north) across the Tabora plateau to **Kigoma**, near Ujiji, on Tanganyika (780 miles).

(3) A light railway from **Tengen**i on the Northern Railway to **Zigi** (12½ miles).

(4) The projected line No. 2 below, from **Tabora** *via* St. Michael to **Mwanza**, is reported to have been completed. The first grants were voted for it in 1914. But no definite evidence appears to exist on this point, and it seems improbable.

(5) Light railways appear to exist—

(a) From **Mtangata** creek to **Kigombe**.

(b) From the **Pangani** river to **Bushirihof**.

(c) At **Amboni** (near Tanga),

but about these lines no details are available.

The following railways are projected :

(1) From the terminus of the Northern Railway it is hoped to carry the line on to Arusha, and then, still roughly parallel to the frontier of British East Africa, to Lamadi or Mwanza on the Victoria Nyanza.

(2) From Tabora on the Central Railway northwards *via* St. Michael to Mwanza on the Victoria Nyanza.

(3) From Tabora in a north-westerly direction to the eastern shore of Lake Kivu, and to Bukoba on the western shore of the Victoria Nyanza.

(4) From some point (probably Zaranda) on the Central Railway to Arusha on the Northern Railway.

(5) From Kilosa on the Central Railway in a south-westerly direction *via* Iringa to Langenburg, at the north end of Nyasa.

CONTOUR OF NORTHERN RAILWAY

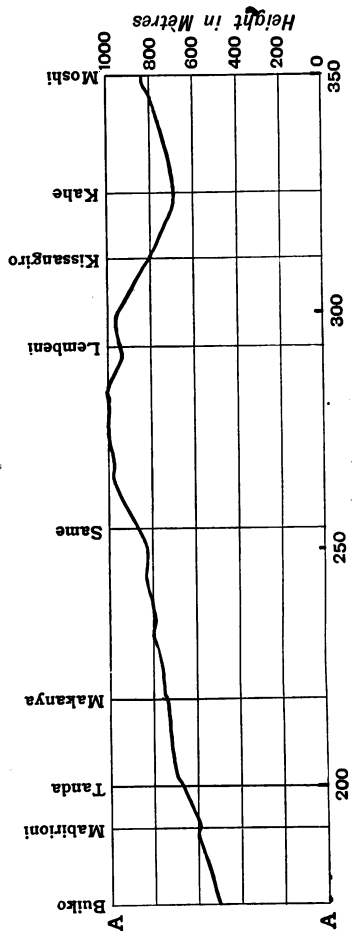
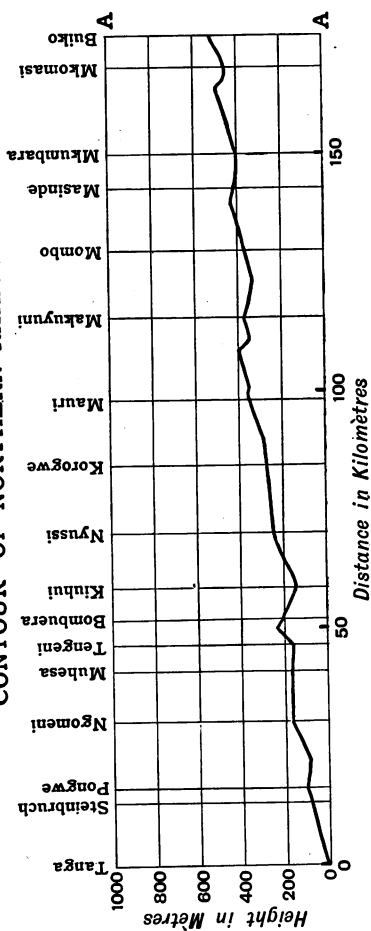


FIG. 4. Contour Profile of Northern Railway

(6) From Kilwa Kivinje inland in a south-westerly direction *via* Songea to Wiedhafen on the NW. shore of Nyasa (422 miles).

(7) A light railway from Lindi inland, about 30 miles.

(8) From Port Amelia (Wiedhafen) to East frontier of Nyasaland.

(1) **The Northern Railway** (Usambara-Bahn or Nord-Bahn).

Single line.

Gauge : 1 metre.

Steepest Gradient : 1 in 40 : but beyond Mombo none above 1 in 60 going inland or 1 in 80 going towards the sea.

Sharpest Curve : 164 yards radius : but there is only one instance of this, the normal minimum radius being 218 yards, and beyond Mombo 328 yards.

Rails : originally 33 lb., latterly 44 lb., 32 ft. long, 12 iron sleepers to each pair of rails.

Stations : two-storied buildings of 8 rooms, with verandah front and back. Every station has a Morse telegraphic apparatus and a telephone. The wires are of copper, 3 mm. (0.1181 in.) diameter, carried on iron posts.

Carriages : 3 classes, the 2nd being divided into 2 compartments reserved for white and black passengers respectively. There are no sleeping-cars.

Fuel : wood only.

Fares : 1st class about $1\frac{1}{2}d.$ per km. From Tanga to New Moshi, £2 2s. 8d.

2nd class for the same journey, £1 3s. 7d.

3rd class for the same journey, 6s. 4d.

Freightage : goods are divided into 5 classes. Freightage is charged

(1) Per 1,000 kilos per km. at rates of from $1\frac{1}{2}d.$ to 8d. for distances up to 100 km.

(2) Beyond 100 km. rate decreases in proportion to the distance.

(3) Above 800 km. the rate is from $\frac{3}{4}d.$ to $5\frac{1}{4}d.$

Rolling-stock : the amount of rolling-stock in 1912 was as follows : 18 locomotives in all (the earlier of which are 6-coupled, 4-cylinder, tank), viz. :

3 of $17\frac{1}{2}$ tons.

5 of $26\frac{1}{2}$ tons.

10 others. (No information as to type of later locomotives.)

25 passenger coaches in all, viz. :

3 two-axled second-class carriages, two for 32 passengers each and one for 18.

2 four-axled second-class carriages for 24 passengers each (continued p. 276).

<i>Distance in Miles.</i>	<i>Name of Station.</i>	<i>Height in Feet.</i>	<i>Bridges and Tunnels.</i>	<i>Remarks.</i>
	Tanga	65		The railway starts from Tanga harbour, and runs up from the iron pier, bending round the town with a steep gradient and sharp curve to Tanga station, 65 feet above sea-level. Here are work-shops, a store, and a loco-motive shop.
7	Steinbruch			From Tanga the line runs in a westerly direction as far as Maurui.
8 $\frac{1}{2}$ 17 $\frac{1}{2}$	Pongwe Ngomeni	311 620		At Ngomeni there used to be an inconvenient double twist in the line, involving reversing the train; but this was latterly straightened out at considerable expense.
25 27 $\frac{1}{2}$	Muheza Tengeni	613 820		Tengeni is the junction for the Zigi light railway, running northwards into the hill-forests of Usambara, and ending at Zigi station (1,437 ft.).
32 35 43 52 $\frac{1}{2}$	Bombwera Kihuhui Nyusi Korogwe	721 600 931 954	Lwengera bridge	A short distance from Korogwe the line crosses Lwengera River, tributary of the Pangani.
				From Korogwe a mountain road runs to the health resort Wugiri, about 10 miles N.
				A short distance beyond Korogwe the line crosses the Pangani itself—a glacier stream from the Kilimanjaro Mts.—by an iron bridge 131 ft. long, resting on two masonry piers which abut on the embankment on either side. It is a box-girder bridge. The rails rest on felt on longitudinal sleepers.
			Pangani bridge (1)	
61 $\frac{1}{2}$	Maurui	1,171	Pangani bridge (2)	Beyond Maurui the line recrosses to the left bank of the Pangani by a bridge similar to that at Korogwe.

<i>Distance in Miles.</i>	<i>Name of Station.</i>	<i>Height in Feet.</i>	<i>Bridges and Tunnels.</i>	<i>Remarks.</i>
71½	Makunyuni	1,286		From Maurui the line skirts the western slopes of the West Usambara Mts., until it reaches, beyond Makunyuni, the station at Mombo.
81	Mombo	1,387		From Mombo a mountain road runs N. to Wilhelmstal (21 miles), Kwai, and the Shume plateau.
88½ 93	Mazinde Mkumbara	1,433		Mkumbara is the starting-point of Messrs. Wilkins & Weise's overhead cable railway, which runs to the Neu-Hornow sawmills, 7 m. N. The cable is hung from standards nearly 100 ft. high, and has spans as long as 3,000 ft., and the line is a considerable feat of engineering.
104½ 109	Mkomazi Bwiko	1,400 1,747	Mkomazi bridge	From Mombo the line runs in a NW. direction as far as Bwiko.
117	Mabirioni	1,840		
131	Tanda	2,121		
152	Makanya Zame	2,263 2,700		
		3,286		From Bwiko the line rises steadily along the western slopes of the Pare Mt. parallel to the course of the Pangani, and reaches its highest summit at the 176th milestone, a little short of Lembeni station (3,286 ft.).
177	Lembeni	3,100		At Lembeni the line is only 12 miles from the frontier of British East Africa.
185	Kwa-Ngoga	2,473		
200	Kahe	2,269	Pangani bridge (3)	From the Lembeni watershed the line sinks again, reaching its lowest point in this section a little short of Kahe station (2,269 ft.).
218	Moshi	2,657		From this point it rises again, and ends at the 218th milestone at Moshi station.

- 2 two-axled third-class carriages for 16 passengers each.
- 2 four-axled third-class carriages without seats.
- 16 others.
- 6 combined postal and luggage vans.
- 2 two-axled brake-vans to carry 7 tons each.
- 91 covered trucks, including 11 two-axled closed goods-trucks to carry 7 tons each, and 1 two-axled cattle-truck to carry 7 tons.
- 108 open goods-wagons, including 23 two-axled open goods-trucks to carry 7 tons each.
- 1 two-axled tank-truck to carry 5 tons.
- 4 two-axled rail-trucks to carry 7 tons.
- 14 four-axled open goods-trucks to carry $12\frac{1}{2}$ tons each.
- 1 derrick (*Hebeldräsiue*).
- 3 travelling cranes (*Wagenkräne*).
- 27 small trucks.

Time-tables : Tanga to Mombo—up, 6 hrs. 30 min. ; down, 6 hrs. 10 min. Average speed, about 12 miles per hour. The whole journey from Tanga to New-Moshi, and vice versa, takes about 15 hours.

Control of railway handed over on 1st April, 1908 by Government to German Colonial Railway Company.

Staff : in 1912, 46 white superintendents ; 877 black workmen.

(2) **The Central Railway** (Zentral-Bahn or Tanganjika-Bahn).

Single line.

Gauge : 1 metre.

Steepest gradient : from coast to Zaranda, 1 in 40 ; W. of Zaranda, 1 in 200.

Sharpest curve : on the coast to Morogoro, 109 yds. ; from Morogoro to Zaranda, 218 yds. ; W. of Zaranda, 328 yds. radius.

Carriages : 1st, 2nd and 3rd class, comfortable.

Fuel : wood and coal.

Fares : same as on Northern Railway.

Dar-es-Salaam to Morogoro 18.90 francs 1st class.

Kilosa 31.55

Dodoma 43.60

Itigi 95.20

Tabora 127.40

Freightage : same as on Northern Railway.

Freightage of 1 ton from Dar-es-Salaam to Kigoma costs about 156 francs. Rate is 0.125 francs per ton per kilometre. Native goods are transported from Kigoma to Dar-es-Salaam at the rate of $7\frac{1}{2}$ centimes per ton per kilometre (continued p. 280).

CONTOUR OF CENTRAL RAILWAY

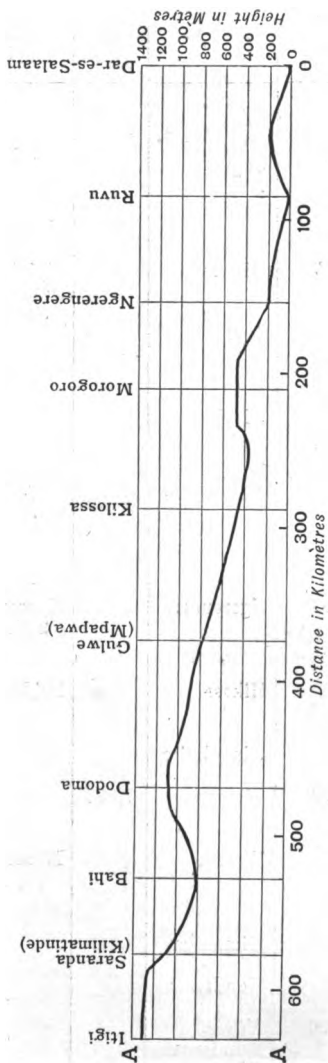


FIG. 5. Contour Profile of Central Railway

<i>Distance in Miles.</i>	<i>Name of Station.</i>	<i>Height in Feet.</i>	<i>Bridges and Tunnels.</i>	<i>Remarks.</i>
13	<i>Dar-es- salaam Mbaruku Pugu</i>	32		The station is connected with the port by rail. On leaving the town the line turns N.E. across the coast-plain, here 8 m. broad, follows the Msimbazi valley, pierces the first line of hinterland heights.
			Msimbazi bridge, 82 ft.	
7	<i>Kiserawe Sogo Kifulu Ruvu</i>	515	Tunnel (short)	Not far from Bagomoyo it crosses a large depression formed by the mouth of the Ruvu-Kingani. In the rainy season this valley is flooded to a breadth of nearly 2 miles. The line crosses it on a high embankment linked with bridges of a total length of 1,312 ft. It rises again first by gentle gradients, then steeply, to the 92nd milestone, where it crosses over Ngerengere on a viaduct 295 ft. long, which it approaches by a series of embankments, cuttings through the rock, high bridges, and retaining walls, rendered necessary by the beginning of the Uluguru chain of mountains. Crossing this mountain country the line reaches Morogoro and enters the wide depression of the Mkatta river, which it traverses in two straight sections of a total length of 24 m., crossing the river itself and its tributaries by a series of bridges of a total length of 787 ft. West of this depression the line rises steadily from 1,300 to 1,600 ft.
		650	Mpiyi bridge, 98 ft. Pangani bridge, 98 ft.	
			Ruvu-Kingani bridges, 1,312 ft.	
93	<i>Ngerengere Mikese</i>		Ngerengere viaduct 295 ft.	
			Bridges.	
129	<i>Kingolesiro Morogoro Mkatta Kimamba Kondoa</i>	1,633		After leaving the excellent station of Kilosa the line penetrates the mountain country by the valley of the Mukondokwa, the whole length of which it follows. This part of the line again necessitated a considerable amount of construction.
			Mkatta bridge, 787 ft.	
180	<i>Kilosa Mumisagara Kidete Gulwe (for Mpapwa) Kikombo Ihumwa</i>			

<i>Distance in Miles.</i>	<i>Name of Station.</i>	<i>Height in Feet.</i>	<i>Bridges and Tunnels.</i>	<i>Remarks.</i>
287	Dodoma	3,674		Sometimes through hilly country, sometimes across open plateaux, the line climbs slowly to Dodoma, where it crosses the second line of heights.
	Zinge			West of Dodoma the line plunges into one of those huge troughs without any overflow which are characteristic of E. Africa. Here, as at Ngerengere, costly embankments and cuttings were necessary, in order to achieve the descent into the depression. The lowest point reached is at Mbahi. Here the line crosses the Bubu, which is nearly always dried up, by a trestle bridge 328 ft. long. The edge of the depression is reached at Manyoni, and soon afterwards the line reaches its highest summit near Itigi, 4,461 ft.
	Nganda			
325	Mbahi	2,723		
	Kintinka Makutupala			
	Zaranda (for Kilima- tinde)		Bubu bridge, 328 ft.	
372	Manyoni Bangayega Kitaraka Kazikazi			From here the line winds over a well-wooded plateau, and falls slightly to reach Tabora.
391	Itigi Tura Malongwe Nyahwa Goweko Iyalula Itubi	4,461		
526	Tabora			
665	Nguruka Kombe	3,937		
678	Mlagarasi		Mlagarasi bridge	Here the line crosses the most important bridge in its whole course, and the one whose construction was most difficult. It is composed of an iron superstructure carried on 21 stone piers. The widest span is 164 ft. ; there are 17 others of 32 ft. The breadth of the river in the dry season is about 130 ft., in the rainy season about 870 ft.
	Ruchugi			
787	Kigoma			

Permanent way : well ballasted, and kept in excellent repair.

Staff (1912) :

137 Europeans.

3,276 coloured men (Goanese, Syrians, Indians) and natives.

Rolling stock (1912) :

44 tank-engines (*Tenderlokomotiven*).

15 locomotives with trailing-tenders (*Schlepptender*).

30 water-trucks.

2 guard's vans.

28 passenger coaches (3 1st and 2nd class, 5 3rd class).

11 postal and luggage vans (5 4-axled).

135 covered goods-wagons.

190 open goods-wagons (45 4-axled).

60 rail-trucks.

3 crane-truck.

8 motor-derricks.

19 hand-derricks.

53 trollies.

(5 locomotives with trailing-tenders and 3 motor-derricks under construction.)

Stations.—With a view to the rapid development of the Protectorate, the stations have been built on an ambitious scale.

At those stations where there are passing lines, 984 ft. of rails are available.

The buildings are of cemented stone, and have flat roofs carried on girders of reinforced concrete, and covered with sheet-iron on a wooden framework. The locomotive sheds are of iron.

The passing-stations include a receiving office, where the business of the station is concentrated, a goods shed, a locomotive shed, a wagon shed, a coal shed, waiting-rooms, lavatories for Europeans and natives, all the apparatus for lading goods, and houses for the station-master and employés.

Dar-es-Salaam and Tabora have large workshops. There are also workshops attached to the passing-stations. They get the necessary motive-power from small motor engines. The stations at Dar-es-Salaam, Kilosa, and Tabora are lighted by electricity.

The principal stations have buffets, and a clock.

A telegraph line follows the railway throughout, and the wires are hung in such a way that the tallest animals can easily pass under them without damaging them.

Time of journey.—Dar-es-Salaam to Morogoro, 8 hours.

Kilosa, 10½
 Dodoma, 16½
 Itigi, 23¼
 Tabora, 29¾

Allowing for stoppages at stations, the whole journey usually occupies 33 hours. It can be done, in case of need, in 26 hours.

Maximum speed, 23 miles per hour.

Control of railway is nominally in the hands of the German Colonial Railway Company, but nine-tenths of the shares have been bought by the Government, and it is practically a State Railway.

(3) Tengeri-Zigi Railway.

Gauge : 75 centimetres (29½ ins.).

Length : 23 km. (14 miles).

Runs to the saw-mills of the Zigi Export Company.

Staff (1911), Europeans, 2.

Natives, 93.

Military use of Railways.

Train-loads (for military purposes).

(1) On both railways :

A 10 ton-wagon will carry 150 pieces of luggage, 25 men, 12 small mules.

A 20-ton wagon will carry 300 pieces of luggage, 50 men, 20–24 small mules.

Passenger coach (3rd class), will carry 30 men.

(2) Complete train on Central Railway = 22 axles in all, 328 ft. length, will carry 275 men, 1,650 pieces of luggage : or 200 men with officers, horses, and baggage.

A single company of Protectorate troops, with officers, horses, and baggage, occupies 2½ trains.

(3) On the Northern Railway the complete train is 246 ft. long, viz. 8 wagons of 10 tons (2 axles).

One train on this line will carry 200 men or 1,200 packages

A company needs 3½ trains.

(4) On the Northern Railway, from Tanga, 2–3 trains can be dispatched daily, and on the Central Railway, from Dar-es-Salaam, 3–4.

It takes about 1 hour to load up a single military train.

Ordinarily the following trains are dealt with :

Dar-es-Salaam, in 6 hours 1-3 trains.

	„ 12	„ 3-4	„
	„ 24	„ 6-8	„
Tanga,	„ 6	„ 1-3	„
	„ 12	„ 3-4	„

LAKES AND RIVERS

German East Africa may be said to be a well-watered country, and its lakes and rivers play an important part in its development. The following description of the more important lakes begins with the most northerly and proceeds along the western boundary. The coast rivers are dealt with after these.

Lakes.

Victoria Nyanza. This is a large lake, 220 miles in length and about the same in breadth. The southern half of it, from Kabindi Bay on the W. to Mohuru Point on the E., is German. The northern half belongs to Uganda (British). It cuts into the land on the S., forming two big bays in the Bukoba Residency, viz. Emin Pasha Gulf and Smith Sound, and again on the SE., where Speke Gulf cuts into the Mwanza District. The principal rivers flowing into the lake from German territory are the Simiyu, the Lohungati, and the Kagera.

The eastern and western shores are of a high, mountainous nature, the northern and southern flat and sandy. The level of the lake is 3,900 ft. above the sea.

A British steamer from Port Florence used to call at Shirati, Mwanza and Bukoba on the way to Entebbe (British). It takes about 10 hours for a steamer to reach Bukoba from Mwanza. There are many sailing boats.

The average depth is about 59 ft.—a great contrast to that of Tanganyika.

Flowing into Victoria Nyanza is the important river Kagera, going W. until it takes an abrupt turn southwards at Kanyonza on the British frontier. Its chief tributary is the Ruwuwu, on the right bank. There is also the Ngono, flowing from S. to N., and meeting the Kagera shortly before its entry into the lake. These contain water in the dry season, but are all to be crossed by ferries in various places in the rains. The most important ferries are at Ruanilo on the Ruwuwu; at Bugufi, a mile S. of the junction of the Ruwuwu and Nyawaronga; at Migera on the upper course of the Kagera; at

Ishangu on the middle course, on the Bukoba-Kigali-Lake Kivu road; at Kanyonza on the bend of the Kagera; at Nsongezi, 35 miles E. of Kanyonza. There is a bridge over the Ngono near Ibwerwa (Bukoba-Kigali road).

Inland from Victoria Nyanza and 24 miles SW. of Bukoba, Lake **Ikimba** lies in a hollow. There is very marshy land to the NNW. of the lake. The water is drinkable, being best at the southern end. The average depth is from 13 to 16 ft.

Lake Burigi lies inland from Victoria Nyanza 27½ miles WSW. from Luwumbo, and is surrounded on N., E. and W. by unwooded hills. It is about 18 miles long. The water is drinkable. Maximum depth under 14 ft. The Ruiga River flows into it at the southern end.

Kasingeini and Ruiga Rivers both flow into Lake Burigi. The latter river dries up in the dry season and simply consists of a series of water-holes.

The Mwishu valley (called on some maps Ngoma), is fed by waters from Lake Burigi.

Lake Kihonde lies W. of Kagera River, S. of Lake Ihema, and level with Migera ferry.

The valleys in Ruanda and Urundi are rather short of water except right down in the deepest clefts, from which the inhabitants are obliged to fetch their supply.

Kivu. About 250 miles W. of Lake Victoria is Lake Kivu—the Bukoba and Ruanda Residencies being situated between the two. The lake is rather like a triangle in shape, and is about 30 miles at its broadest, and about 60 miles long. Half of it is Belgian and half German. No details are available as to the craft which ply along the lake. Kivu is ringed in by mountains. The Rusisi River runs S. 120 km. from Kivu to Lake Tanganyika and constitutes the boundary line between German and Belgian territory. There are numerous fords and ferries over it. There are various tributaries in German territory, of which only the Mpanda presents difficulties after heavy rains.

Lake Tanganyika is about 400 miles long, and the breadth varies from 40 to 100 miles. The most important of the rivers emptying into it is the Mlagarasi. The only outlet is the Lukuga.

The shores of the lake are steep, rocky, and thickly wooded. The lake is 2,600 ft. above sea-level. It is slightly saline. The lake at one time appeared to be falling steadily, but since 1908 no further fall is believed to have taken place.

The coast from Ujiji to Uzumbura is so steep and rugged that landing is difficult.

Tanganyika is, after Lake Baikal, the deepest lake known in the world. It is divided into two basins, N. and S., by a bottom ridge running across the lake from Kangwe on the W. to Kungwe on the E. The depths on this ridge run from 446 ft. to 1,968 ft.

The southern basin contains a deep valley off Kirundo on the E. side, extending to Samba on the same side, and having a greatest depth of 4,758 ft.

The northern basin contains a greatest depth of 4,189 ft., and also a submarine plain at a depth of 3,609 ft., extending from Ubwari (W.) to Cape Kabogo (E).

Lake Tanganyika divides German East Africa from the Belgian Congo on the W. The southern shore belongs to Rhodesia (British).

In Ujiji is stationed the 80-ton steamer *Hedwig von Wissmann* (transport available for one Company). Many canoes on which the natives cross the lake. At the missions and in the trading ports on the lake are also many large dhows and canoes. The sub-district port Bismarckburg possesses one large dhow (300 loads), one large boat (25 loads), two canoes (10 and 5 loads). Here also one or two dhows for 150–200 loads and several large canoes. Foreign boats: Congolese steamers (100 tons), one English steamer of the African Lakes Company.

About seven German steamers, the largest of which had a tonnage of 480, have plied on the lake. They could probably all be armed to some extent. The fuel for all these is wood. There are possibly other larger steamers, launched since 1914.

Fuel stations have been established all along the E. coast of the lake, with German overseers and native labour. The wood when cut is piled up in chores. The kind of wood most valued is Kpani, red wood, very resinous, which can be used whilst green. The following are some of the wood stations, named from N. to S.:

Muhakarika.
Magala.
Kigoma.
Ujiji.
Kalundu.
Mrimi.
Gowe.

Mouth of Kafui River.
Ruguvu.
Kipwero.
Kirando.
Kala.
Bismarckburg.

Building and repair facilities.—At Kigoma, the western terminus of the railway from Dar-es-Salaam, there is a patent slip. The sections of the *Graf von Götzen* were put together on this slip, and the vessel launched from it. It was launched at the end of

1914, and is worked by electricity. Two other twin-screw steamers will follow.

Native craft.—Use for mining and allied purposes might be made of native war canoes. The natives of the locality, a warlike tribe, possess hundreds of these dug-outs, paddled by 15 or 20 men each side. Large numbers of this tribe who had been discharged from the King's African Rifles were taken into the German service.

Rivers.—The Mlagarasi River, which flows into Tanganyika about 25 miles below Ujiji, is probably navigable for long distances. It is of great depth in its lower reaches. It is 130 to 330 ft. broad in the dry weather, and in the rains has broadened to $2\frac{1}{2}$ miles. No fords even in the dry weather. Many crocodiles. There is a ferry on the Tabora-Ujiji caravan road.

Tributaries are the Ruchugi, Rugufu, and Lwichi—perennial streams, with difficult crossings during the rains. The Ruchugi, where the caravan road passes, is $3\frac{1}{4}$ ft. deep and 100 ft. across. It cannot be forded in the rains, but there is a ferry. A log bridge could easily be built, in case of necessity, over the Rugufu. The Lwichi cannot be forded in the rains.

Other rivers are the Ugalla—impracticable in its lower course, with no bridges and no boats. A temporary rope bridge could be built. The Rungwa is crossed by a ferry boat in the rains on the Bismarckburg-Kilmatinde road. The Saisi is always fordable.

Lake Nyasa, about 330 miles SE. of Tanganyika, is about 300 miles long by 15 to 55 miles broad. Only the northern portion of the lake abuts on German East Africa. The lake is 1,700 ft. above sea-level. It is bounded to the E. and W. by lofty mountains. These ranges extend along the whole lake from N. to S., and in the N. the same trough-like valley is prolonged, with similar flanking ranges, to Lake Rukwa. The mountains, which thus run parallel with the lake shores, are in reality the broken edges of high table-land. The lake is exceedingly deep—over a greater part of its area 200 fathoms have been recorded. In many places the enclosing ranges rise to a height of 7,000 or 8,000 ft.

The lake forms an important link in the water-route from the Zambezi mouth (in British territory) to the heart of Africa. Wiedhafen is the best German harbour, while Old Langenburg, on a projecting spit of land some 10 miles from the northern extremity, is another anchorage.

From Old Langenburg the 90-ton steamer *Hermann von Wissmann* did nine passages a year round the lake.

In Mwaya there is a large iron boat as well as a whaleboat and a steel-built wherry at one's disposal, and also a number of big

canoes. In Wiedhafen a large whaleboat. There are also on the lake :

(1) The English Government steamers *Gwendolen* (c. 150 tons), *Pioneer* (50 tons), and an old gunboat.

(2) Two steamers of the African lakes, *Queen Victoria* (120 tons) and *Domira* (80 tons). One of these came on an average every 4-6 weeks to Mwaya.

(3) Two large steamers of the Lukoma Mission (English).

(4) A little steamboat of the Berlin Mission.

(5) A privately owned steamer.

(6) 3 dhows.

Rivers.—The Ruhuhu is the largest river flowing into Lake Nyasa—about 2 hours south of Wiedhafen. It is from 650 to 1,000 ft. broad at the mouth, but very shallow ; in the rains much deeper and with a strong current. There is a large ferry-boat.

The following flow from the Rungwe mountains : (1) the Kivira, which has many fords, mostly practicable in the rains. There are boats on the lower reaches ; (2) the Mbaka, which cannot be crossed without great difficulty in the rains except by the bridges on the high roads. Ferry boats are numerous ; (3) the Lufirio, broad and shallow, into which flow the Matezi and Kasiabona, coming from the Rungwe Mountains, and the precipitous Lumakaria, rising in the Ukinga highlands ; (4) between the Kivira and Mbaka flows a short, deep stream—the Mbazi. It can only be crossed by boats in the rainy season.

Between Langenburg and Mwaya the Mbaka must be crossed twice, once by a large ferry-boat, and once by a strong bridge. The Kivira and Lufirio are crossed by bridges constructed of wood and iron.

South of Mwaya, the Songwe forms the boundary with Nyasaland, and is not fordable in the rains. Boats are numerous.

Lake Rukwa lies in continuation of the Nyasa valley, and about 130 miles from it. It is about 2,600 ft. above the sea. It varies in size from 40 to 60 km. It has no exits. The level, though subject to periodic variations, has risen since 1895. In dry weather the depth does not exceed 10 ft. The water is brackish.

The lake has two large feeders, the Songwe (distinct from the Songwe on the Nyasaland border) and the Saisi or Momba. The Songwe enters the lake at its S. end, being joined about 50 miles above its mouth by the Rupa (or Lupa). Both are perennial, and can be crossed (sometimes with difficulty in the case of the Songwe) in the rains. The Saisi enters on the NW. side, and is also perennial, but can be crossed at all times.

Coast Rivers.

Of the rivers which have their outlet on the coast, the Pangani river (Jipe Ruvu) is the most northerly one of any importance. It rises in Kilimanjaro at about 150 miles in a direct line from the sea, its course being through Jipe lake; it is navigable for small craft between the lake and the Hohnel cataracts, below which it has numerous tributaries, and many islands with villages on them, to the Pangani Falls, from about 1 mile below which it is clear, though shallow, to the sea.

For the first 6 miles from the entrance to Teufelsfelsen, the southern bank is a dense mangrove swamp extending back to the hills; the swamp ceases above Teufelsfelsen. The northern portion is partially lined with mangroves, and on this bank is Kovu Kovu mount, 360 ft. high, while abreast it, on the south bank, is a ridge 400 ft., from both of which a good view of the river can be obtained.

Pombwe, one of the principal places on the river, is situated about one mile westward of Kovu Kovu, and above this the river runs between hills on either side, which sometimes extend to the bank. At other places there are cultivated plains from half a mile to 2 miles wide, but during high river these are mostly flooded.

The river is highest about June, and lowest about January. It is tidal for a distance of 22 miles from the entrance, above which, except when the river is at its highest, the stream is not so strong. Boats can, however, work their way up. The stream is apparently strongest above Koleni, within 5 miles of the falls, where the river is narrower.

The Pangani is from 30 to 100 ft. broad, and without rapids, from the Jipe lake to Bwiko. In the drought season it can be crossed by fords and bridges. The land between the river and the Pare mountains, which run parallel, is flat—sometimes bush, and sometimes covered with long grass.

There are permanent crossings: (1) between Pangani and Bweni (on the south side of the entrance to the river) by sailing-boats and dhows; (2) half an hour up-stream from the great falls; (3) a wicker-work bridge connects the Friedrich Hoffmann plantation with Hale village, two days up-stream from the falls. The river can be crossed by men and horses swimming at Hale, when they are well used to this.

There are many crocodiles in the Pangani.

Vessels of 10 ft. draught can cross the bar at high water and lie afloat off Pangani village, but knowledge of local conditions is necessary to do so. Above this, the depth is not less than 1 fathom

to Pombwe, about 11 miles up. Above the spot where the tidal influence ceases (22 miles) it is said that there is not less than 3 ft. of water in the channel during the dry season to within a mile of the Pangani or Margaret Falls (about 45 miles). Possibly craft drawing about 2 feet could reach the falls at any time.

The Pangani or Margaret Falls must not be confused with the Pangani Falls on the Rufiji river.

South of the Pangani, the **Msangasi** flows into the Indian Ocean, rising in Handeni mountains. In the dry weather it becomes a series of pools, but in the rains cannot be crossed without boats. There are crocodiles.

The **Mligazi** river becomes dry except for isolated pools, and is passable even in the rainy season.

Wami River. This has a constant flow of water. About 3 ft. deep in dry weather and 30 to 50 ft. broad. It would have to be crossed in boats in the rains. Crocodiles.

The Wami has two mouths. Of these Chunango, the southern, is 2 miles N. of Ras Utondwe, and Purahanya, the northern, is one mile further northward: both are difficult to distinguish on account of the coast being fringed with mangroves, and the rivers taking abrupt turns from the entrances. The Purahanya is the principal entrance. Both have shifting bars, and a boat will have difficulty in getting in after half-tide.

The Chunango branch terminates abruptly at 3 miles and is dry at low water; a little below this point a narrow and tortuous channel, also dry at low water, leads to the principal branch.

The Purahanya branch, inside its bar, is about 10 yards wide and 12 ft. deep at low water (springs) with mangroves on either side. About 8 cables within the entrance, on the right bank, is a tract of rising ground faced by a red cliff about 6 ft. above high water, and at 2 miles up, at the fork of the channel leading to the Chunango branch, the river is only 20 yards wide at low water.

Above this, near another steep cliff on the left bank, it gets rapidly shallow, with snags and sandbanks blocking the channel, and at low water a steam cutter cannot proceed more than a mile above the junction, while at a point $1\frac{1}{2}$ miles further up a small boat will find it difficult to proceed, although some miles beyond the river slightly deepens. Habitable land is reached at about 7 miles from the mouth, all that below being mangrove swamp.

The Purahanya mouth is difficult to find, but the south fall of Udoe hill bearing 258° true leads to it; the 3 fathoms contour line, near that of 5 fathoms, is about 3 miles off the mouths. Springs rise 15 ft., neaps 10 ft. Saadani, a large village, is about $6\frac{1}{2}$ miles

NNW. of the Purahanya mouth: southward of it is a peculiar-shaped hill, appearing from a distance like a house.

The following are tributaries of the Wami, flowing from the north: the Liwale (with the Mjonga) and the Lukigura. The two latter have their source in the Nguru Mountains. In the rains the Lukigura and Mjonga can be forded.

The **Kingani** river (known in its middle and upper courses as **Ruvu**, and finally **Mbezi**), coming from the south-westward, and following an extremely tortuous course, flows 3 or 4 miles inland of Bagamoyo, and into the sea about 4 miles NW. of it. The river could be made useful as a means of transport for about 50 miles or even more when moderately high.

It is fronted by a shifting bar varying in depth, drying about 2 miles from the shore, with the sea generally breaking heavily on its edge, but there is usually a canoe passage through the drying bar at low water. Numerous snags encumber the direct approach, rendering it advisable to enter either from the N. or E. After one hour's ebb no heavily laden boat should attempt the passage.

The actual passage is 6 cables wide from mangrove to mangrove, and half a mile inside is Windi ferry. The river is winding, with a general south-south-westerly direction, and has an average width of 100 yards for 12 miles—but this is only 5 miles distant in a direct line from the mouth. To this point the river runs mostly through dense mangroves, although a few pieces of bare land, inundated during the rains, are passed; after this the open country begins, with a flat grass plain on the right bank, extending 2 miles from the river to the edge of a low but steep-faced plateau.

At 19 miles from the entrance, but only 7 miles in a direct line, is Kingwere ferry, where the river is 40 yards in width. Two miles above this it narrows to 25 yards, and flows through forest, the land being flat and the banks steep—about 8 ft. high. Snags and sand-banks at about this part render the river dangerous.

A short distance farther on the Kangeni, a large feeder, runs into it from the W., and at 10 miles above Kingwere the river is close to the edge of the plateau before mentioned, a steep cliff, about 40 ft. in height, forming the right bank. The river is tidal to some point between Kingwere and this.

From this, for about 5 miles to Dunga, a small village standing on a hill on the right bank, the river runs at a short distance from the steep edge of the plateau, now touching it, and now sweeping away with bold bends.

At Dunga, which is about 35 miles from the entrance by the river, but only 15 miles direct, the width is about 18 yards, and the river

is said to maintain this width for many miles. On the left bank a broad plain stretches to the foot of low undulating hills.

At about $1\frac{1}{2}$ hours from high water the depth is about 5 ft. on the bar, the depth between the points of entrance being about 2 fathoms. At Dunga there is about 6 ft.

The Kingani is navigable as far as Mafizi throughout the year for steam pinnaces, and during some months for vessels of heavier draught. The water is brackish and insanitary. Boats are plentiful throughout its course.

The chief tributary from the W., the Ngerengere, which flows in some miles above Mafizi, can only be crossed by boats in the rainy season. In the dries the water is only in single pools. The remaining tributaries form no hindrance in the rainy season, and dry up subsequently.

The **Mpiyi, Mbezi, Msimbazi, Msinga, and Luhute** rivers. These have plenty of water in the rainy season, and form obstacles right up to their upper courses. The middle and lower reaches can only be crossed by boats. Even in the dry season the Luhute always has water, but appears not to be navigable. The others have water only at their mouths.

The **Rufiji** river forms a large delta with a richly ramified river system. The Simba-Uranga, one of the northern branches of the delta, is navigable as far as Zalale for large steamers (coast steamers of the D.O.A.L. of 2,800 tons). There is a bar in front of the estuary. The northern branches have an average breadth of 1,600 ft., and nearly all the branches are navigable by revenue cutters and dhows. The northern arms can never be forded, but the southern branches, e.g. the Mohoro, are fordable at the dry season during the ebb. Mohoro town can, however, be reached by dhows at high tide in favourable conditions. Dhows do not go above the head of the delta, but the revenue cutter can sometimes get as far as Utete. Salt water is present up to the branching of the Bumba arm.

From Mohoro bay northward stretches the remarkable maze of creeks which forms the delta of the Rufiji. In the rainy season of the interior, December and the two following months, the whole plain is frequently flooded.

The delta has been pushed forward in advance of the general coast-line, and now forms a convex projection 50 miles in length, with mangroves occupying the greatest portion of the coast-line. Within the swampy belt is a broad flat plain, about 35 miles in length N. and S., covered with long grass and a few trees. There is cultivated land about here.

From Ras Pombwe to Kikunguni village, 36 miles to the northward, the large mouths open to the sea. All these mouths are connected by a series of small creeks, which serve, at high water, as canoe channels from one village to another, without the necessity of crossing the bars, the absence of which at the Simba-Uranga and Kikunya mouths render them the best entrances. Simba-Uranga is used by coasting vessels which load with timber for Zanzibar. The Kikunya is only connected with the Rufiji by side communications with the Simba-Uranga.

Above the delta the river is not nearly the size that might be expected from the number and width of its mouths and the undoubted distance of its source. By the time the inundation caused by the interior rains has subsided, the available water channel is very limited and obstructed by shoals; also wherever it widens it is apt to be shallow. The average depth of the channel from the head of the delta up to the Pangani Falls is 15 ft. It is lowest in November, as in the case of the Zambezi—the characteristics of the two rivers being much the same. But even in November the fording of the Rufiji would be difficult and dangerous, owing to the numerous pools and holes, some of which are from 20 to 26 ft. deep. Crocodiles are also a danger.

It is navigated by a river-steamer as far as Mtanza in the dry season (unless conditions are peculiarly unfavourable), and as far as Kibambawe (Kingulio) in the rains. A statement by one authority that the steamer can reach Sombe at high water, and the Pangani Rapids at low water, perhaps refers to favourable years.

Among the tributaries which the Rufiji receives below the Pangani Rapids may be mentioned the Lungonya (r. bank) and the Msangasi and the Kihimbwa (l. bank). These streams carry water only in the rainy season, but rise rapidly and become unfordable after rain: it is therefore advisable to cross before camping. The Luhohi (a r. bank tributary) carries water in the dry season, but is then fordable. In the rainy season it is liable to sudden rises like the other tributaries. In the middle part of its course its water is sulphurous and undrinkable.

Above the delta the Rufiji flows through a plain, usually stretching for some miles on either side, covered with long grass and undergrowth of varying density, interrupted by numerous cultivated clearings. In the neighbourhood of Utete (the capital of the Rufiji province) on the southern bank, from Kipo to Mroka on the northern bank, and near Kibambawe on both sides of the stream, there are ridges coming right down to the river.

Above the Pangani Rapids the Rufiji is not fordable even in the

dry season. Some miles above the Rapids is the confluence of the important river **Ruaha** (which flows from the W. and WNW.) with the Rufiji, which flows from the SSW. (for the Ruaha see below). About 50 miles in a straight line above the mouth of the Ruaha and immediately above the Shuguli Rapids, the Rufiji is formed by the junction of the Ulanga (or Kilombero) river and the Luwegu. Of these the Ulanga (which is itself formed by several considerable streams rising in the Ubena country) traverses the N. part of Mahenge province. It and its principal affluents always contain flowing water, and are serious obstacles. Even in the driest season the Ulanga and some of its tributaries are more than 6 ft. deep, and in the rains they inundate large areas in which even the high roads are knee-deep or breast-deep in water. They contain numerous crocodiles. The Ulanga and the chief rivers of its system provide traffic ways for canoes, which are of little importance. On account of its rapid current the Ulanga itself is not navigable below the old Ulanga station near Ngahomai's village (about 40 miles in a straight line from the Shuguli Rapids). The Luwegu carries water intermittently during the rainy season only, when the plain on either side of the stream is frequently from 18 in. to 2 ft. under water. The principal tributary of the Luwegu is the Marangandu. The latter and its affluents the Nyenye and the Dapate carry water at all seasons, though in the dry months they can be forded, and even sometimes disappear underground.

The Ruaha in the lower part of its course is the boundary between Mahenge and Iringa Districts to the S., and Morogoro District to the N., and farther up-stream between Iringa and Dodoma. It is formed by a much ramified river system which waters Iringa and the S. part of Dodoma District. In its upper course the main stream flows from the Ubena country (Iringa District) in the SW. It is here called the Mpangali, or the Great Ruaha, to distinguish it from its r. bank affluent the Little Ruaha, on which Iringa station lies. The Ruaha is navigable by large canoes at least as far as Kidatu, and probably a long way farther up-stream; but on this last point no information is obtainable. For most of its length it apparently cannot be crossed, at least in the rainy season, except by boats (which in the upper sections of its course are not likely to be locally available), by small fords, or by primitive suspension bridges of native build. It is reported to form large floods in the Usangu country (Iringa District).

The Ruaha has many tributaries which in the rainy season bring down considerable volumes of water. The principal of these is the l. bank affluent the Kizigo, which enters from the NW. (Dodoma

District) ; but this river carries water in the rainy season only, when it may for some days together run 13-17 ft. deep (no boats locally available, but rafts can be easily made from the creepers in the neighbouring forests). The Kizigo has a large r. bank affluent the Msombe (or Myombe), the water of which is reported to be perennial, but in some places to be found only underground during the dry season. With regard to the other tributaries of the Ruaha the only information available is that its larger affluents in the Usangu country can be crossed in the rainy season only by boats, small fords, and perhaps by a few native suspension bridges.

The **Matandu** river flows into the sea about 3 miles N. of Kilwa Kivinje by a broad mouth (called in the *Africa Pilot*, Part III, 1915, pp. 343-4, the Mto Gingwera). It is tidal for a few hours' distance up-stream. Near the mouth, where the Kilwa-Mohoro route crosses the river, there are two ferry-boats. The banks in the neighbourhood of the mouth are muddy and covered with mangroves, and are said to be almost impassable. The Matandu carries water at all seasons as far up as the neighbourhood of its junction with the Liwale (about 90 miles in a straight line from its mouth). It apparently may be forded in the dry season. There are crocodiles in the Matandu from the mouth upwards. Its tributaries may be obstacles in the rainy season.

The **Mbemkuru** (called Mto Bwamkuro in the *Africa Pilot*, Part III, 1915, p. 333) flows into Mzungu Bay near Kiswere. It is tidal in the neighbourhood of its mouth. In its lower course it never dries, and can be a serious obstacle.

In the rainy season it discolours the water for 1 mile to seaward, and at low water a sandbank bars the entrance of the river to boats. On a rising tide there are heavy overfalls.

In its upper course, even where in the dry season no water remains above ground, there is always water under the sand, and in holes and pools, and the same is true of its left-bank tributary the Ruhuhu (Luhuhu), which flows into it about 120 miles in a straight line from its mouth. The marshes of Kilima-Ndembo lie between these two rivers near their confluence, and the Mitendaki swamp is on the left bank of the Mbemkuru, about 15 miles in a straight line to SW. of the same point. The banks of the upper Mbemkuru are in places thickly populated.

The **Lukuledi** (called the Mto Lindi in the *Africa Pilot*, Part III 1915, p. 330) flows into the bay of Lindi. 'The entrance to the river is nearly five cables wide between its banks, but the navigable channel has a width of 2 cables only. From Gala Island, on which there is a village, 3 miles above the entrance, the river takes a SW.

direction for about 3 miles where there are several branches. Mtali, the principal one, is navigable, at about half-tide, for vessels of from 6 to 8 ft. draught for about 10 miles. At 13 miles up it apparently ends in a swamp, for boats could not proceed beyond.' (*Africa Pilot*, Part III, loc. cit.) In the coast region the Lukuledi is apparently never dry. It has many wide brackish creeks (of which the Mtali, mentioned as an arm above, is probably one). Near its mouth the Lukuledi can only be crossed by a ferry. There are considerable numbers of crocodiles in the Nguru-Mahamba creek, west of Lindi town, but few in the other inlets.

The Lukuledi contains water above-ground at all seasons as far up as Mtama, about 25 miles inland. There is also a continuous flow of water in its left-bank affluents, the Nyangao and the Mahiwa (about 38 miles and 41 miles respectively in a straight line from Lindi). An authority says of the rivers in the part of the Lindi District through which the Lukuledi flows in its upper and middle courses, that they can be crossed both in the dry and in the rainy season, though when the rain is very heavy there may be a few hours' delay. There are no crocodiles.

The **Rovuma** river, which forms the S. boundary of German East Africa for nearly the whole of its course, flows into the sea at Rovuma Bay by a widely branched delta which is wholly in German territory. It is about 8 cables wide between the trees on either side of its mouth, but at low water this width is reduced to less than 4 cables by a sand-bank that dries from the western shore. Thence the direction of the river is SW., but when examined in September, during the dry season, the river being then very low, about 2 miles within the entrance it was obstructed by sandbanks, in places nearly dry at low water: springs. Although there is no bar, the great depth of water immediately outside the river, changing suddenly to 30 fathoms, causes dangerous overfalls, especially when the wind is blowing from the eastward, rendering it at such times unsafe for a boat to attempt to enter, the sea breaking right across: the out-going stream runs stronger near the mouth of the river than a river boat could stem. The Rovuma, which contains crocodiles, is never dry. From the point (2 miles within the mouth of the river), where sandbanks begin, the navigation becomes intricate, the channel being narrow, with a depth of only a few feet in places, and here and there running abruptly from one side of the river to another. The navigation of the Rovuma depends much upon the season.

An authority of 1911 says of the river where it flows past the Makonde plateau, that it is here a torrent in the rainy season, and the many rapids and rocks increase the difficulty of crossing it. In the

dry season it may be crossed at fords. In the Newala country at the W. end of the Makonde country, and in the Majeje country W. of Newala the character of the country remains the same. In the Majeje it receives, among numerous other l.-bank tributaries, the waters of the Rukwika, the Lukwamba, the Lumesule, and the Mohezi or Muhuwezi with its tributary the Mtetesi. The Mohezi always has water, the others only in the rainy season, but water can always be found in their beds by digging. The Mohezi is difficult to cross in the rainy season (rafts or temporary bridges necessary: abundant material), and crocodiles are then found in it up to a point some miles from its mouth. In the dry season it is easy to cross and free from crocodiles (for affluents of the Mohezi other than the Mtetesi, see p. 139). The other rivers mentioned above can be crossed in the rainy season, when there are occasionally crocodiles at their mouths. The beds of the Lumesule and Mtetesi are rocky, and full of holes and pools in the dry season. Above the Majeje in the plains of the Sasawara country the characteristics of the Rovuma remain the same. None of its l.-bank tributaries contains flowing water throughout the year: all of them can be crossed in the rainy season.

Above the Sasawara river, in the district of Songea, the Rovuma continues to form the Portuguese frontier as far as its junction with the Msinje. In this part of its course, though it can only be forded at a few places (e. g. near Kimbande Mountain), boats can be obtained at many places, and there is abundance of timber. Above the Msinje the Rovuma flows from the N. It remains unfordable at all times of the year, except possibly for some short stretches in the upper reaches. There is a ferry at the confluence of the Rovuma with the Mhukuru, and at Matomondo the former river is crossed by a wooden bridge, 123 yds. in length, and 6½ ft. wide. In the uppermost part of its course, where it is flowing in general W. and WNW. directions from the Matogoro Mountains, the Rovuma is fordable at least for short stretches, but for short periods during the rains it becomes unfordable.

TELEGRAPHS, TELEPHONES, AND POSTS

Wireless Telegraphy.—The German Colonial Atlas (1914) gives the following stations:

- (1) Dar-es-Salaam.
- (2) Bukoba.
- (3) Mwanza on Lake Victoria Nyanza.

* To these (4) Tabora may certainly be added.

Dar-es-Salaam. The Berne list (1915) gives range landward, 400 miles ; to ships, 450–600 miles by day ; 1,250 miles by night.

Call K A C.

Telefunken system ; musical spark, slightly damped.

Wave length (metres) 600 normal.

	300
	1,800
	2,500

It is, however, very probable that Dar-es-Salaam could communicate with Mwanza, 544 miles distant.

Note.—Distance of Zanzibar from Dar-es-Salaam is 62 miles.

The wireless station, destroyed at the beginning of the war, has been re-established with lower aerials, and probably communicates regularly with Mwanza.

Bukoba. The Bukoba station's range was reported to be 125 miles, but as it presumably communicated with Mwanza, it was probably slightly longer. The installation was destroyed in June 1915.

Mwanza. The range of this station was reported to be 560 miles, which would suffice for communication with Dar-es-Salaam. As, however, Mwanza is believed to have been in regular communication with Windhoek, the range must have been very greatly extended, unless Tabora was in reality the transmitting station.

Tabora. No details are available, but it is possible that the apparatus here installed is a very powerful one (see Mwanza).

In addition to the above, various other stations have been established since the war. Probable stations are : Uzumbura and Ujiji on Lake Tanganyika ; Kigali in the Ruanda Residency ; Morogoro ; Umbulu (in the Arusha District) ; and on Kilimanjaro.

Telegraphs.—There are three main telegraph systems, two radiating from Dar-es-Salaam, and the third based on the Usambara railway. (See p. 180.)

(1) One passes through the centre of the country, starting at Dar-es-Salaam and reaching Tabora through Morogoro, Kilosa, Mpapwa, and Kilimatinde. From Tabora it proceeds N. to Mwanza, on Lake Victoria Nyanza. There is also a short branch from Dodoma to a point in the main line. From Kilosa is a branch line about 130 miles long to New Iringa.

It is presumed that the line has now been extended from Tabora to Ujiji and Kigoma on the Tanganyika.

(2) Again, there is a coast-line extending from Dar-es-Salaam northward to Tanga *via* Bagamoyo, Saadani, and Pangani, and

southward as far as Mikindani through Mohoro, Kilwa Kivinje, and Lindi.

(3) From Tanga, following the Usambara railway to Moshi, through Wilhelmstal, and on to Arusha.

There is also a telegraph line, more or less parallel with the Tanganyika shore, from Ujiji to Bismarckburg, and from the latter place it is continued into British territory at Kituta, and so *via* Abercorn to Capetown. This same British line is the quickest means of communication which New Langenburg has with Dar-es-Salaam. Messages are sent to Mwaya, and thence one day's boat journey to Karonga in Nyasaland, from which place they are transmitted to Capetown and by cable to Dar-es-Salaam. The services on all these lines are liable to interruption by violent electric storms and also by bush-fires.

Telephones.—There are telephones in the following districts :
Wilhelmstal :

- (1) Between Mombo and Wilhelmstal.
- (2) Between New Hornow and Mkumbura (on the Usambara railway).

Tanga :

- (1) Telephones at Moshi, Arusha with connexion at Wilhelmstal ; all railway stations.
- (2) Between Amboni and Kiongwe.
- (3) The following connexions at Amani :
 - (a) District Biological Institute.
 - (b) The Union Plantation at Derema.
 - (c) The Prince Albert Plantation at Kwamkoro.
 - (d) The Deutsche Holzwertungs-Gesellschaft at Zigi.

Pangani : There are many telephone connexions between the plantations in Bondeiland and the Usambara railway.

Bagamoyo : Telephones link the Kisauke and Cherhani plantations of the Leipzig Cotton-spinning Company with Saadani.

Morogoro : Telephones at Morogoro and Kilosa.

Dar-es-Salaam : There are telephones all over the town. The exchange is at the Post Office.

Ujiji : There is a telephone at Ujiji.

Tabora : Telephone communication between Tabora and Mwanza.

Heliograph Stations :

Mohoro : There was a proposal to establish heliographic communication between Mohoro and Mahenge.

Dodoma : Communication between Kondoa Irangi, Singida, and Mkalama.

Kondoa Irangi: In communication with Kilimatinde, Singida, and Mkalama, as well as Dodoma.

Iringa: Heliographic communication with Mahenge, the Ubena station, and Masoko is proposed, but the Usungwe and Livingstone Mountains, frequently hidden in clouds, are a hindrance in the rains.

Mahenge: Can communicate with various sub-stations.

Heliography between Bukoba and Kigali was tried, but proved a failure. Pigeon post was also tried, but apparently not proceeded with.

Cable.—The only submarine cable communication with German East Africa is from Zanzibar to Bagamoyo and thence to Dar-es-Salaam. At the last-named place the cable comes on shore within a few yards of West Ferry Point.

Posts.—In 1913 there were 47 post-offices and agencies in German East Africa, of which about half were under postal officials and the remainder under the superintendence of the local civil or military officials. German East Africa is a member of the Postal Union. Mails in the interior are carried by runners. In December 1912 a sorting-van was for the first time attached to the Dar-es-Salaam-Tabora train, under the supervision of a native clerk. The van is used for collecting and distributing purposes.

CHAPTER XI

ROAD-TRANSPORT AND ROAD-COMMUNICATIONS

ROAD-TRANSPORT

Motors.—Motor-traffic is possible only on quite a few good roads. The Germans have some lorries among their motor-transport. Details are not available.

Ox-wagons, &c.: pack-animals.—Ox- or donkey-wagons can be used on a certain number of roads; but, after porters, pack-animals (mules, camels, donkeys) are chiefly employed. The prevalence of tsetse limits the animals' probable term of service to a few months, and a large supply for replacement is therefore necessary. On a long line of communications it may be found possible to use porters, or sometimes motor-transport, for the parts of the route infested by tsetse, and ox-wagons or pack-animals on stages where the fly is not found.

The following details are taken from the German text-book on Field-Service in East Africa :

'Boer-wagon' with team of 20 oxen carries a load of about 4,400 lb.

Heavy ox-cart with team of 12 oxen carries a load of about 2,200 lb.

Light ox-cart with team of 6 oxen carries a load of about 1,100 lb.

Wagon with team of 8 mules or donkeys carries about 1,320 lb.

Mule of large-sized breed carries (saddle, &c., included) about 285–330 lb.

Mule of small-sized breed carries (saddle, &c., included) about 220–265 lb.

Camel carries (saddle, &c., included) about 395–440 lb.

(A good professional porter carries 66 lb.)

It is claimed that very good results have attended the use of the German Foot Artillery ammunition wagon 02 in the SW. part of the Protectorate. This wagon has a team of 16–20 oxen or 14 mules, and is said to be specially suited to the transport of heavy articles, as it has a comparatively restricted loading area, and if loaded too high may easily capsize. It carries 4,400 lb. A German military wagon said to be found useful in the Protectorate if its wheels are

strengthened is the provision wagon 95. With a team of 8 mules it carries 2,200 lb.

The following are reckoned by the Germans as normal marches for the animals used and for porters :

Oxen, per day, 12–13 miles.

Donkeys, per day, 12–13 miles.

Mules, per hour, $2\frac{1}{4}$ –3 miles, per day 15–16 miles.

Camels, per hour $2\frac{1}{4}$ – $2\frac{1}{2}$ miles, per day 12–13 miles.

Porter, per hour $2\frac{1}{4}$ – $2\frac{1}{2}$ miles, per day 12–16 miles.

The camel is of little use for transport in districts where there is much water or in mountainous country. Camel-drivers used to be recruited by the Germans in Aden. The Germans reckoned 1 driver to every 3 camels or mules.

Oxen and camels can exist on grass-fodder alone. Mules and donkeys need an additional feed of corn. The German reckoning for fodder and water is as follows :

For mule or donkey (according to size of animal) 1–2 kgs. (about 2 lb. 4 oz.–4 lb. 6 oz.) of corn ; as additional feed 4–5 kgs. (about 8 lb. 13 oz.–11 lb.) of corn.

A mule must have 12 litres of water (a little over $2\frac{1}{2}$ gallons) a day.

A camel may eat about 44 lb. of grass a day.

A camel may drink about 12 litres of water (a little over $2\frac{1}{2}$ gallons).

To keep in good condition a camel should not go more than 2 days without fodder nor more than 5 days without drinking.

Note on Tsetse.—The tsetse-flies, which carry disease to horses, mules, camels, donkeys, dogs, cattle, pigs, goats, and most kinds of wild animals, belong to various branches of the *Glossina* family. One wing of the tsetse is folded on and covers the other. All flies which display this characteristic should be suspected.

Infected animals have on an average about three months to live. Occasionally an animal may survive the disease. Usual symptoms are swellings of the genital organs, eyelids, and nose.

The flies direct their attack mainly against the leading animals of a baggage-train, team, &c. It is therefore often advisable, especially in the case of a large transport column, to let animals that are of little value, or are already infected, precede the others by 35–50 yards. Infection may also be avoided if to each animal to be protected four men can be spared who can keep the flies off with branches, &c., in front, behind, and on either side. A specially valuable animal may be protected by a complete covering of khaki, or by being rubbed in petroleum, oil of cloves, or some other oil or grease. The flies seem to be repelled by the grease of the substance rubbed on the animal more than by the smell.

No certain remedy against tsetse has yet been discovered. Quicksilver and preparations of arsenic have sometimes been successful. Arsenic administered prophylactically seems to lessen considerably the severity of the disease. It should therefore be given to the animals during the march and for six weeks afterwards. The following regulation of the doses is recommended by a German authority :

For 2 days, 0.3 grammes (4.63 grains) of arsenic daily.

For 2 days, 0.6 grammes (9.26 grains) daily.

For 2 days, 0.9 grammes (13.89 grains) daily.

For 2 days, 1.2 grammes (18.52 grains) daily.

Ninth and following days, 1.5 grammes (23.15 grains) daily.

Towards the end of the course of treatment a gradual reduction of the dose, similar to the gradual increase at the beginning. A sudden cessation of the treatment after a high dose endangers the animal's life.

For the distribution of the tsetse see the descriptions of the road-communications in the various districts below. But further information must always be obtained as to existing conditions.

Porters.—In most parts of the country porter-transport is still necessary. The marching and carrying capacity of the porters (on which of course depends the mobility of the column which they accompany) varies considerably according to the tribe or tribes from which they are drawn. Details as to the value of porters generally obtainable in the different Districts will be found below. The best material for porter-transport is to be found among the Wanyamwezi and Wasukuma in the Tabora and Mwanza Districts, the Wangoni in the SW. of the Protectorate, and the old carrier-tribes of the coast-population. For columns marching in the region between Lakes Victoria Nyanza and Tanganyika (called by the Germans the *Zwischen See-Gebiet*) the Waheia of the Bukoba District and the Warundi from the neighbourhood of Usambara are said to provide fairly useful porters. Each company of the German Protectorate troops has a number of permanent trained porters armed with rifles, and capable of taking an effective part in the defence of the convoy or of the camp (see p. 225). The native soldiers are also usually allowed, even on active service, to take with them their 'Askari boys', who carry their comforts, &c.

An average day's march by a fairly large train of good porters is reckoned by the Germans at $2\frac{1}{2}$ miles an hour and 12–16 miles a day. Small caravans with good march-discipline, &c., can go both faster and farther without suffering great strain. (A long day's march on a good road in flat country, and with exceptionally good porters,

may be as much as 30 miles). The rate and length of marches is reduced in the rainy season to a degree which of course varies with the quality of the road. Often the decrease is considerable. A professional porter is expected by the Germans to carry 30 kgs. (about 66 lb.). The porter's ration is calculated at 1 kg. (about $2\frac{1}{4}$ lb.) a day.

Porters of different tribes have different methods of marching. Thus the Wanyamwezi and Wangoni, who have long been accustomed to service with Europeans, march in close columns at an easy and even pace with few rests : while the Waheia prefer to cover the ground in spurts at varying rates and with frequent short halts. The necessity, on active service, of keeping the porters' column in close formation, of making the men march at an even pace, and of not allowing them to halt except by order, is apparent. The regular porters of the German Protectorate Force are trained in peace-time to march in this way. The Wanyamwezi, the Wasukuma, and the Swahili of the coast are among the tribes who carry their loads on their heads.

Delays in camping, &c., may be avoided by a proper distribution of loads : strong porters should be at the head of the train carrying what is likely to be needed first when the camping-place is reached. Reserve-porters to make losses good are necessary on expeditions. The German method is to march the reserve-porters at the rear of the carriers' train, or in parties behind each of the 'groups' into which their porters are divided (see p. 226). The latter arrangement has the advantage that men of the reserve are close at hand to take over loads wherever they are needed. Care must be taken that the reserve-porters are not made by the other carriers to share loads before it is necessary that they should be used.

See further on the porter's train, pp. 225-8.

For a rule used by the Germans to find the approximate length of a column with porters moving in single file with good march-discipline, see p. 226.

For normal rates of payment in the different Districts see pp. 308-40.

Bicycles.—The difficulty of keeping riding-animals in the country, and the comparative rarity of roads fit for four-wheeled vehicles, make bicycles extremely useful. They can often be ridden on native tracks. The Germans sometimes provided their post-runners with collapsible machines which could be carried over ground where it was impossible to ride.

Crossing of rivers and swamps.—The rivers of East Africa often rise very rapidly, and even quite small streams may become unfordable as the result of a few hours' rain. It is therefore advisable

to camp on the farther side of any fordable river or stream reached at the end of a march. This has also the advantage that it saves the men from beginning the next day's march in wet boots and clothes.

The native boats which in peace-time are usually to be found at river-crossings are almost always removed and carefully hidden. The German Protectorate troops have aluminium boats which are carried in sections on the march.

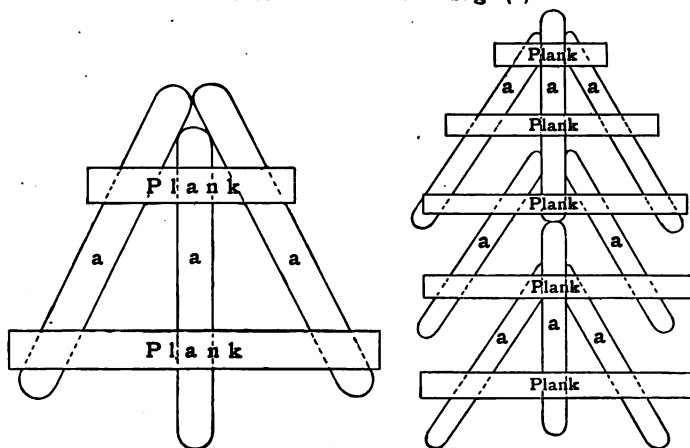
Rafts.—In place of aluminium boats the Germans occasionally use the bags of the Europeans' tents and camp-beds for the construction of rafts. These bags are filled with dry grass, capok, or cork-mattress, and arranged as in the accompanying diagram, with planks, light branches, logs, or bamboos lashed across them (the natives make bast ropes of tree bark which can be used in case of need). The bags must be carefully filled and secured to keep out the water. Old bags which let the water in must be opened from time to time between the rafts' journeys, emptied, and filled again with dry grass. Trenching-tools can be used as paddles: a steering-paddle at the stern may be necessary in a strong stream. A raft of three new sacks with good dry grass can easily carry four men. The carrying capacity of the raft can be increased by inserting empty tins that have no leaks, or water-tight clothes-bags filled with grass; but it then becomes more difficult to steer. A serviceable raft can also be constructed of tins and poles alone. See diagram, p. 304.

The awning of an officer's tent folded once lengthwise, and stretched round the bottom and sides of a framework of bamboo or wood (about $6\frac{1}{2}$ ft. \times 3 ft. \times $2\frac{1}{2}$ ft.) is sometimes used by the Germans, but care has to be taken to see that the timbers of the framework and the canvas are made very secure, as a strong stream may easily loosen the cords, &c. If the canvas comes loose on any side, the whole construction capsizes. The framework timbers should be clamped. Stuffed bed-bags, &c., may be used as ballast.

Papyrus, bamboo, banana wood, capok, and raffia palms are suitable materials for raft-construction.

Boat-building.—In the interior of the country the most common local types of boats are bark canoes and dugouts. Bark canoes have very small carrying capacity and are very fragile. The bark is peeled whole from the tree and bent up high at the ends. In the case of dugouts the wood must be left considerably thicker at the bow and stern than at the sides. Outriggers are necessary for narrow boats. The Germans calculate that in 24 hours one company of native troops (162 men before the present war) by working

Rafts constructed of tent-bags (a)



Raft of tins (k) and poles (b)

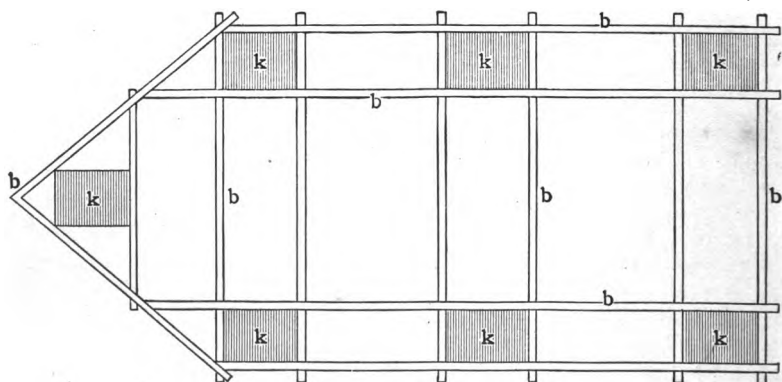


FIG. 6. Types of Rafts used by Germans for River-crossings.

in shifts can, if they have sufficient tools, hollow a log which will carry 40 men and 40 loads. If there are not enough tools, fire can be used as well.

The natives have in some places used up almost all the suitable timber in the immediate neighbourhood of the rivers, and wood must often, therefore, be brought from several miles away.

Capok-trees are very suitable material for dugouts, as well as for rafts and bridge-building. The Germans have therefore endeavoured to persuade the natives to plant these trees, which grow very quickly, near the chief river-crossings.

Bridge-building.—As regards the special conditions of East Africa, it may be remarked that bridges for infantry over small streams may be made with liana (climbing plant). Capok is a good material, as has been mentioned above. Over a shallow and very sluggish stream or across a swamp a bridge for infantry can be quickly and easily made by bundles of bamboos thrown in to form a causeway, with a roadway of grass lashed down across its surface.

Papyrus swamps can be crossed by laying down a corduroy road or by making a causeway of the papyrus itself. The papyrus clumps on the right of the path are broken down so that they fall to the left and those on the left so that they fall to the right, and the clumps growing between them are trodden down in the direction of the line of march. A papyrus causeway so made can be strengthened to bear baggage-animals by laying papyrus stems, marsh-grass, and branches of trees alternately lengthwise and crosswise till the whole construction is sufficiently solid. This takes some time, and it may sometimes be possible to cross a papyrus or reed marsh by stepping from clump to clump.

A party which may have to cross rivers of any size needs at least one long rope, which in rapid but fordable streams may give the men a handhold, or, if the water be too deep for fording, may assist the ferrying across of boats.

Capok makes excellent stuffing for life-belts or life-buoys.

In rivers where the presence of crocodiles is suspected, shots to frighten them away should be fired into the water before the crossing begins and from time to time while it is taking place. One or two good marksmen should be told off to watch for any sign of a crocodile.

The Germans have been in the habit of using as pioneers advance parties of irregulars armed with rifles and side-arms and equipped with bush-cutters and ropes. The Askari and regular porters have been trained in pioneer work.

ROAD-COMMUNICATIONS IN THE DISTRICTS

The following account is taken from a German military authority of 1911, except where it is otherwise stated. Allowance must of course be made for the construction and improvement of roads and bridges since that date, and especially between points of military importance since the outbreak of the present war. Moreover, German East Africa is a country where in regard to communications much may change in a short while otherwise than through the bridge-building and road-making activity of the civil or military authorities. Rivers alter their course, permanent swamps are formed and dry up, native tracks appear, are enlarged, and disappear, native villages change their position, and the rainy and dry seasons may cause a region to wear quite different aspects at different times of the year. Diseases of men or animals spread to one area and are stamped out or die out in another. The tsetse-fly in particular may have shifted its grounds to a considerable extent. It is obvious, too, that details as to ferry-boats, &c., are not of much value under the present circumstances.

It is to be noticed, with regard to the description of roads given below, that in a country where the majority of roads are still native tracks along which a column has to proceed in single file, such terms as 'wide' or 'good' need not mean that the road to which they are applied is passable for wheeled traffic.

With regard to native tracks, it may be mentioned that they are generally very winding, and that the path has usually a large number of other tracks leading off from it in various directions. In such a case guides from the immediate neighbourhood are necessary: and little or no dependence can be placed on such persons beyond the vicinity of their homes. Where detached parties or stragglers are following a column, the turnings which are not to be followed have to be marked by signs previously agreed upon.

Under each District information will here be found on most or all of the following points:

- (i) The classes of road in the District, with special mention of the more important.
- (ii) A time-table of marches between important points, (a) for caravans of military porters; (b) for native runners.
- (iii) Prevalent animal diseases.
- (iv) Rivers and swamps considered as obstacles, with the means of crossing them locally available.
- (v) Capacity of local natives for porters' work, and methods of

recruitment ; rates of pay for porters in normal conditions ; guides, runners, and interpreters.

(The German authority from whom the information with regard to interpreters is derived assumes the European to possess a knowledge of Swahili.)

I. *Wilhelmstal District.*

Roads.—(a) The Mombo-Wilhelmstal high road (chaussée) can be used by motors. Time by motor, 2–3 hours.

(b) Roads passable for wheeled traffic :

1. Wilhelmstal–Magamba Pass–Kwai.
2. Wilhelmstal–Magamba Pass–New Hornow.
3. Zakare–Herkulo–Kwai.
4. Mkomazi–Kihulio–Gonya (Kiswani to Zame extension under construction in 1911).
5. Korogwe–Wugiri–Ambangulu.
6. From mile $7\frac{1}{2}$ of the Mombo–Wilhelmstal road, *via* Wuga to Bumbuli.
7. Mombo–Mazinde–Bwiko.

(c) Roads passable for pack-animals :

Communication of this kind between all missions and plantations in West Usambara.

(d) Native paths :

Very numerous throughout the District.

The Magamba Pass was described in 1911 as the only way between the northern and southern parts of the W. Usambara mountain country.

<i>Time-Table.</i> —					<i>For Caravans.</i>	<i>For Runners.</i>
Wilhelmstal–Tanga	.	.	.	.	6 days	3 days
„ –Pangani	.	.	.	.	7 „	3 „
„ –Korogwe	.	.	.	.	3 „	1½ „
„ –Bwiko	.	.	.	.	2 „ ?	1 „
„ –Mombo	.	.	.	.	3 hours down	
					4 hours up	
„ –Kondoa Irangi	.	.	.	.	17 days	8 „
„ –Moshi	.	.	.	.	10 „	5 „
„ –Kwai	.	.	.	.	3½ hours	
„ –Mlalo	.	.	.	.	10 „	
„ –Mlola	.	.	.	.	14 „	
„ –Shume	.	.	.	.	2 days	
Korogwe–Pangani	.	.	.	.	3 „	1½ „
„ –Kondoa Irangi	.	.	.	.	14 „	7 „
„ –Mpapwa	.	.	.	.	14 „	7 „
„ –Mombo (no railway)	.	.	.	.	2 „	1 „
„ –Moshi (Pangani route)	.	.	.	.	16 „	8 „
„ –Moshi direct	.	.	.	.	12 „	6 „
„ –Wugiri	.	.	.	.	1 „	1 „

Animal Diseases.—The tsetse was in most parts of the District in 1911. Only heights over 2,300 ft. and the great steppes were then entirely free. The neighbourhood of the hill-streams was considered specially dangerous.

Obstacles at all seasons are :

1. The Pangani (see further, p. 287) : very broad and deep ; many crocodiles. Railway bridges between Korogwe and Ngombezi (at mile 54½ of Tanga-Moshi line), and at Maurui (at mile 61½).

European bridge for vehicles at Korogwe. There are numerous native foot-bridges, particularly at the points where the river divides into several channels. These bridges are very primitive, can bear little weight, and can be used by only one person at a time.

From Mkaramo to Marago-Opuni there are native foot-bridges at various places, but these are frequently washed away by floods and reconstructed elsewhere.

A European privately-owned boat on the river near Buiko.

2. The Mkomazi (see p. 120) ; numerous crocodiles ; impassable only after heavy rains. No boats. A wooden bridge a short distance above the junction with the Pangani.

3. The Uмба (see p. 121) ; numerous crocodiles ; impassable only after heavy rains. A ford a short distance above the border of Tanga District ; another just below the junction of the streams which form its source. No boats.

Wood for building bridges, rafts and boats, is to be found everywhere in the neighbourhood of the rivers. The Germans considered it advisable in war-time to take boats for crossing the Pangani and the Lwengera.

Porters, Guides, &c.—The Wanyamwezi settlers in the province make good porters, but are for the most part in employment.

The Washambaa also act as porters and work well in the mountains, but break down in the steppe-country. They are engaged for work through the Akidas. Payment per day is 30 heller as wages and 15 heller for keep. In West Usambara porters are supplemented by numerous ox-carts belonging to planters and settlers.

The number of donkeys belonging to natives in 1911 was as follows :

In the Akidat of Mombo	.	.	.	.	253
" " Wilhelmstal	.	.	.	.	4
" " Bungu	.	.	.	.	1
" " Korogwe	.	.	.	.	2
" " Kihulio	.	.	.	.	17
" " Bumbuli	.	.	.	.	1

Animals belonging to Europeans in the whole District: 271 donkeys; 19 mules; 81 horses.

The Akidas and Jumbes have provided reliable messengers and guides to the Germans. Interpreters for languages other than Swahili are unnecessary.

II. Tanga District.

Roads.—It is reported that at the end of 1914 'a good road' ran along the railway for most of the way from Tanga to Korogwe.

In November 1914 the road from Tanga to Handeni was easily passable for motor-lorries.

The following information dates from 1911:

(a) Made roads:

(1) Tanga-Yasin.

(2) Tanga-Pangani. The Mtangata creek near Tongoni can be forded at low tide, and must be crossed by boat at high tide. A caravan of 30 men takes about $1\frac{1}{2}$ hours to cross. Six canoes, each holding 8 men, are available. It is better to march through the village of Tongoni to the sea, and to cross the creek by dhow to the ferry-boat landing-stage on the other side. Light railway from the creek S. to Kigombe.

(3) Tanga-Muheza.

From the railway—

(4) Muheza-Kwagoroto.

(5) Muheza-Derema.

(6) Muheza-Kwa Muhanya-Lewa (old Pangani road).

(7) Ngomeni-Malimba-Zegoma-Bwiti.

(8) Bombwera-Kuze plantation ($3\frac{1}{2}$ miles).

(9) Nyusi-Kwamkoro-Amani (too steep for wheeled traffic).

(10) Nyusi-Amani (too steep for wheeled traffic).

(11) Nyusi-Hale (Friedrich Hoffmann plantation).

These roads everywhere suitable for wheeled traffic, well kept up. Most of the rivers bridged with stone or wooden bridges.

(b) Beaten tracks (*ausgeschlagene Wege*):

(1) Tanga-Bwiti.

(2) Eight short tracks from Ngomeni to plantations.

(3) Lewa-Kwa Fungo-Hale.

(4) Moa-Bwiti.

(5) Moa-Yasin, with light railway.

(6) Muheza-Malimba.

(7) Muheza-Kwamkoro-Amani-Derema-Kerenge, with many side-tracks to plantations.

(8) Muheza-Pangani.

These tracks are without bridges, but columns can in many cases move along them in file.

(c) Numerous native tracks serve as connexions with the remaining points in the Province.

<i>Time-Table.—</i>		<i>For Caravans.</i>	<i>For Runners.</i>
Tanga-Pangani		2 days	1 day
„ -Muheza		1½ „	1 „
		(25 miles)	
„ -Korogwe		3 days	1½ „
		(50 miles)	
„ -Wilhelmstal		6 days	3 „
„ -Bwiti		2 „	1 „
„ -Moa		2 „	1 „
„ -Yasin		2 „	1 „
Muheza-Amani		1 „	1 „
„ -Bwiti		2 „	1 „
„ -Pangani		8 hours (?)	1 „
Amani-Bwiti		2 days	1 „
Bwiti-Yasin		2 „	1 „
„ Moa		2 „	1 „
Bwiko-Moshi		9 „	4 „
Tanga-Gombero		5 hours	
Gombero-Bwiti		6 „	
Bwiti-Daluni		3 „	
Daluni-von Lekow plantation (Bombo)		2 „	
Bwiti-Maramba		2-2½ „	
Maramba-Chulwa		2½ „	
Chulwa-Zegoma		4 „	
Zegoma-Malimba		2½ „	
Nyusi-Rusanga		3 „	

Animal Diseases.—Tsetse and coast-fever were prevalent throughout the whole District in 1911.

Obstacles.—Besides the wooded virgin forest on the Usambara mountains, and the Pangani at the S.E. corner of the District, the only serious obstacles are the rivers Uмба, Zigi, and Mkulumuzi.

There are no bridges or permanent ferries on the *Uмба*, and canoes only here and there. On the banks there is everywhere plenty of wood for building bridges, rafts, canoes, &c.

On the *Zigi* there are the following bridges :

(1) On the Tanga-Yasin road near Amboni : wire suspension bridge and wooden bridge with light railway.

(2) At Kwa Malimba : stone bridge.

(3) At Lunguza : stone bridge.

(4) Below Amani at the Zigi saw-mills : stone bridge.

(5) At Kwamkoro : stone bridge.

There are canoes here and there on the middle course of the Zigi. There are the following bridges over the *Derema* stream :

- (1) At the Zigi saw-mills.
- (2) Between *Derema* and *Amani*.

The *Mkulumuzi* is bridged :

- (1) At the mouth : reinforced concrete bridges.
- (2) On the *Muheza*-*Kwagoroto* track near *Magila* : wooden bridge.
- (3) On the *Tanga*-*Amboni* track.
- (4) On the *Ngomeni*-*Malimba* track near the *Schöller* plantation : wooden bridge.

The *Nyusi* stream is bridged :

- (1) On the *Nyusi*-*Amani* track, near *Nyusi* : stone bridge.

The *Pangani* is bridged :

On the track from *Nyusi* to the *Friedrich Hoffmann* plantation : narrow suspension bridge for pedestrians. Iron railway bridges over various rivers, with stone piers, but no roadway (passable only on the metals), at miles 26, 38, 43 of the *Tanga* railway.

The *Koreni* is bridged :

On the *Tanga*-*Pangani* road : stone bridge. There is plenty of wood on the banks of the rivers for building rafts and bridges.

Porters, Guides, &c.—Good porters are difficult to get in the District. The local tribes only come unwillingly, and have not much marching or carrying capacity.

Firms in *Tanga* charge in peace-time 10-20 rupees commission for each porter recruited by them. As much as 25 rupees per head is paid as commission for plantation labour. The wage is 50 heller a day, including food-money.

For larger expeditions porters were procured through the District officials. The German authorities intended to draw the 18,000 workmen on the plantations who were not native to the District.

The *Akidas* and *Jumbes* have provided the Germans with reliable messengers and guides. As a rule interpreters in languages other than *Swahili* are not necessary.

III. *Pangani District.*

Roads.—In November 1914 the *Handeni*-*Pangani* road was easily passable for motor-lorries.

It is reported that the Germans have now (1915) a motor-road running across the District, and connecting the *Usambara* and *Central Railways* (from *Korogwe* to *Kilosa* ?).

The following information dates from 1911.

The road-communications in the District are good throughout. All places worth mentioning are connected by roads cut through the bush, 6–10 ft. wide and well kept up. The most important roads are 12–20 ft. wide, carefully planned and constructed (especially in Bondeiland, N. of the Pangani; also the Handeni–Zindeni–Korogwe road). Many of them are passable for wagons.

<i>Time-Table.—</i>	<i>For Caravans.</i>	<i>For Runners.</i>
Pangani–Handeni	6 days	3 days
„ –Kondoa Irangi	20 „	10 „
„ –Tanga	2 „	1 „
„ –Mwanza	40 „	20 „
„ –Saadani	3 „	2 „
„ –Wilhelmstal	7 „	3 „
„ –Muheza	2 „	1 „
Handeni–Saadani	6 „	3 „
„ –Korogwe	3 „	1 „

Animal Diseases.—In 1911 the whole District was much infested with tsetse, especially in its northern part. In the reserve of virgin forest called Msbugwe, W. of the Genda-genda on the Pangani–Handeni road, the flies are found in immense numbers, owing to the numerous herds of buffaloes in the neighbourhood.

Obstacles.—The Pangani is an obstacle throughout the year, and can be crossed only by bridges, ferries, or boats. Permanent ferries: (1) between Pangani and Bweni (sailing-boats and dhows); (2) half an hour below the great Falls, which are 3 days up-stream. Wire suspension bridge connects the Friedrich Hoffmann plantation with the village of Hale, 2 hours above the Falls: it is passable for loaded porters: pack-animals or cattle swim across (men who understand swimming animals across the river are settled at Hale). Marsh and sedge on and near Pangani, between its mouth and the Falls. On the Pangani river a few canoes (dugouts).

Porters, Guides, &c.—Porters can be obtained through agents in Pangani and other places on the coast; in the interior, through the Jumbes and Akidas.

Wages: 40–50 heller a day (including food allowance). Messengers and guides often unreliable.

In case of war the German authorities expected to obtain numerous good porters from the plantation labourers not native to the District. Interpreters for languages other than Swahili are only necessary on the Masai steppe.

IV. *Bagamoyo District.*

Roads.—(a) Improved roads :

- (1) Bagamoyo—Changohera—Mbweni.
- (2) „ —Mapinga—Mbweni.
- (3) „ —Bwawa—Ruvu station.
- (4) „ —Kisemo—Ngerengere (leading to Morogoro).
- (5) „ —Lusako—Nguru.
- (6) „ —Winde.
- (7) „ —Saadani.
- (8) Lusako—Mandera—Miono.
- (9) Saadani—Mbewe—Msente.

(b) Native paths connect the other places in the District.

The improved roads 4, 5, and 9 are in good condition, about 20 ft. broad, fit in parts for light carts in the dry season. Bridges for the most part only of wood. In the region near Bagamoyo which is liable to inundation by the Kingani, there are stone bridges and a high earth-dam. The other improved roads are mostly only tracks 6–10 ft. wide, with no special engineering.

In the bush the native paths are often much overgrown, and it is difficult for caravans to move along them.

<i>Time-Table.</i> —				<i>For Caravans.</i>	<i>For Runners.</i>
Bagamoyo—Dar-es-Salaam	.	.	.	3 days	2 days
„ —Mbweni	.	.	.	2 „	1 „
„ —Ruvu station	.	.	.	3 „	2 „
„ —Morogoro	.	.	.	9 „	4 „
„ —Mandera	.	.	.	4 „	2 „
„ —Winde	.	.	.	1 „	1 „
„ —Saadani	.	.	.	2 „	1 „
Saadani—Winde	.	.	.	2 „	1 „
„ —Mandera	.	.	.	3 „	2 „
„ —Handeni	.	.	.	7 „	3 „
„ —Pangani	.	.	.	3 „	1 „

Animal Diseases.—In 1911 tsetse and coast-fever were reported widespread in the whole District. In 1915 the country on the coast at and N. of Bagamoyo was specially reported as infected by tsetse.

Obstacles.—The rivers Kingani and Wami are serious obstacles to communication. There are a number of ferries which cross them in the District.

(1) On the Bagamoyo—Nguru or Ngerengere road, ferry across the Kingani (2 dugouts fastened together on a guide rail—capacity about 30 men).

(2) On the Bagamoyo-Nguru road ferry across the Wami E. of its confluence with the Liwale (2 dugouts fastened together—capacity about 20 men).

(3) On the Bagamoyo-Saadani road ferry across the Wami at Kisauke (2 dugouts and 1 larger boat).

(4) On the Bagamoyo-Mandera road there is a bad suspension bridge across the Wami, which is nevertheless passable for loaded porters.

(5) For the Mafizi ferry see under Dar-es-Salaam District.

(6) Scattered dugouts are found here and there on the Wami and Pangani.

• The route Saadani-Kisauke-Winde is difficult in the rainy season owing to floods and swamps. In such circumstances marches on this road take double the ordinary time. Material for building boats and rafts may be found everywhere on the Wami, Kingani, and Ngerengere. All streams other than the Wami, Kingani, and Ngerengere, even in the rainy season, are obstacles only for a few hours.

It is difficult to raise porters, as there are very few professional bearers in Bagamoyo or Saadani. The Wazeguha are the best of the local tribes for this purpose. They have strength and endurance, but are unwilling. They are engaged through the Akidas or Jumbes, and receive 25 heller wages and 10 heller *posho*. Guides and runners are best obtained from the Akidas or Jumbes. Those engaged independently are untrustworthy. The Germans thought it necessary to bind guides in time of war. Swahili everywhere understood.

V. Morogoro District.

Roads.—Round Morogoro, especially in the W. Uluguru plantation-country, are well-constructed roads, passable for wheeled traffic. The caravan routes Kilosa-Iringa and Kilosa-Mahenge are easily passable for porter-caravans, as are also the native tracks. Well-made riding- and foot-paths (a) in W. Uluguru to the mica works of Chenzema and Kibuku, to the Mgeta Mission, and the forest station of Bunduki, (b) in E. Uluguru to the Matombo Mission, the forest station of Kazanga, and Kisaki. Besides these made roads and paths there are mountain-paths, rather difficult.

<i>Time-Table.</i> —					<i>For Caravans.</i>	<i>For Runners.</i>
Morogoro—Mahenge	.	.	.	.	15 days	7 days
„ —Bagamoyo	.	.	.	.	9 „	4 „
„ —Kisaki	.	.	.	.	5 „	3 „
„ —Kazanga	.	.	.	.	4 „	2 „
„ —Bunduki	.	.	.	.	2 „	1 „
„ —Manyangu	.	.	.	.	5 „	3 „
Kilosa —Morogoro	.	.	.	.	4 „	2 „
„ —Bagamoyo	.	.	.	.	14 „	7 „
„ —Iringa	.	.	.	.	12 „	5 „
„ —Mahenge	.	.	.	.	15 „	6 „
„ —Manyangu	.	.	.	.	6 „	3 „
Kazanga—Bunduki	.	.	.	.	2 „	1 „
„ —Kisaki	.	.	.	.	3 „	1 „

Animal Diseases.—In 1911 tsetse was found everywhere in the District, except at altitudes above 2,650 ft. In 1915 it was specially reported as prevalent in Usagara and Khutu.

Obstacles, &c.—Bridges only on made roads passable for wheeled traffic. On other routes the rivers are rather difficult to cross in the rainy season. Wood for raft- and bridge-building is everywhere to be found. On the Kilosa—Iringa road dugout-ferry over the Ruaha.

Porters, Guides, &c.—Porters are difficult to get at Morogoro, on account of the numerous plantations in the neighbourhood. At Kilosa, where professional porters (Wanyamwezi) are domiciled, they are easier to get. If no professional porters are taken, for every 5 porters a reserve porter must be engaged. Porters' pay half a rupee per day, inclusive of keep.

Guides everywhere obtainable.

VI. *Dar-es-Salaam District.*

Roads.—In the summer of 1915 a metalled road from Dar-es-Salaam to the Rufiji delta was under construction. The following information dates from 1911.

The District has good wide roads in the areas where there is most traffic. A broad carriage road 5 miles long leads from Mpiyi railway station to Kola, which lies on the great caravan road. There is a made road leading S. as far as the river Msinga, which is crossed by a stone bridge. Elsewhere, native tracks, which offer no difficulties to caravans.

<i>Time-Table.—</i>				<i>For Caravans.</i>	<i>For Runners.</i>
1.	Dar-es-Salaam—Pugu	.	.	1 days	1 days
2.	„	—Maneromango	.	4 „	2 „
3.	„	—Wikumbula	.	6 „	3 „
4.	„	—Lubega Lake	.	7 „	4 „
5.	„	—Mkamba	.	4 „	2 „
6.	Wikumbula	—Mkamba	.	2 „	1 „
7.	Dar-es-Salaam—Kisiju	.	.	3 „	1 „
8.	„	—Konduchi	.	1 „	1 „
9.	„	—Mpera	.	4 „	2 „
10.	„	—Mafizi ferry	.	4 „	2 „
11.	„	—Bagamoyo	.	3 „	2 „
12.	„	—Morogoro	.	9 „	4 „

Animal Diseases.—Tsetse, coast-fever, and horse-sickness were reported in 1911 prevalent throughout the District. In 1915 an area about 30 miles in circumference, lying on the railway W. of Dar-es-Salaam was specially reported as infected by tsetse.

Obstacles, &c.—The above times can be kept to in normal rainy seasons. Even small streams, however, may be impassable for hours when in spate. Near the mouths of the rivers and at the creeks, the tides must be taken into account. Wood for bridging and rafts is not always immediately available. German columns on the march take with them aluminium boats. Stone bridge over the river Msinga; railway bridges over the Mpiyi and Ruvu, and over all the smaller rivers.

Ferry at mouth of Dar-es-Salaam harbour, let out to Arabs; capacity about 10 men or 2 animals. (Numerous Government-boats, lighters, and dhows in Dar-es-Salaam.) Mafizi ferry on the Ruvu—capacity 10 men, 2 animals.

Porters, Guides, &c.—The conditions of portorage in the District are unfavourable. Porters are difficult to get, and of very inferior marching and carrying capacity.

In the case of a hurried mobilization, the German authorities intended to fall back upon the black population of Dar-es-Salaam town, and then to use, if necessary, the plantation-labourers. Payment, 50 heller a day, including allowance for food, &c. Runners, guides, and interpreters can always be had. In war, measures would be necessary to prevent interpreters and guides from deserting.

VII. *Rufiji District.*

Roads.—In the summer of 1915 a metalled road was under construction from Dar-es-Salaam to the delta of the Rufiji. The following information dates from 1911.

(a) Roads fit for wheeled traffic :

Kilindi-Mohoro.

Mohoro-Nanshete (12-13 miles).

These roads are raised causeways of beaten earth, wide enough for one vehicle at a time, with wooden bridges, or concrete culverts over the streams.

(b) Beaten roads (*ausgeschlagene Wege*) :

Mohoro-Dar-es-Salaam.

,, -Kilwa.

,, -Kibata.

,, -Kitunda-Ngarambi.

Ngarambi-Kidete (Kilwa).

Mayenge-Rupiagi-Kiane-Ndonde Repa-Kidete.

Mtanza-Maneromango.

Mayenge-Kitunda.

Ndundu-Ngumburuni-Ngaru-Kisegese.

Ngaru-Bumba-Uchembe-Kisiju.

Kowoni-Ngulakula-Koge-Kisangire.

Luhembero-Nyandete-Kibaba (Kilwa).

On both banks of the Rufiji; one passes through Utete.

(c) Native tracks everywhere connect the villages, &c.

Time-Table.—

	For Caravans.	For Runners.
Mohoro-Dar-es-Salaam	7 days	3 days
„ -Kibata	2 „	1 „
„ -Kilwa	3 „	1 „
„ -Simba Uranga (boat traffic)	2 „	2 „
„ -Lindi	9 „	5 „
„ -Mahenge	20 „	10 „
„ -Kisaki	9 „	5 „
„ -Morogoro	12 „	6 „
„ -Kibambawe	6 „	3 „
„ -Kisangire	5 „	3 „

Animal Diseases.—Tsetse everywhere in the bush regions. The open part of the Rufiji plain was reported free from tsetse in 1911. (In 1915 a tsetse belt was reported as extending over 100 miles inland from the coast along the Rufiji and its tributaries.) Coast-fever sporadic.

Obstacles, &c.—The Rufiji, with the northern arms of its delta, cannot be forded at any season. The southern arms, such as the Mohoro, are fordable in the dry season during low tide.

The ferry-boats on the Rufiji are large dugouts. The principal ferries are: Msomene, Kilindi, Mkunga, Kuhori and Logeloge Plantation, Mtanza, Kibambawe, and Mtundusi. Smaller canoes

(1 man and 1 load) are to be found almost everywhere. (For other craft on the Rufiji see p. 290.)

Wood or other building-material is not to be obtained on the Rufiji itself.

Porters, &c.—It is difficult to procure porters owing to the reluctance of the natives to serve. In the delta there are no porters to be obtained. In the interior they are provided through the Akidas and Jumbes. Their marching and carrying capacity is affected by change of climate, but is otherwise good. For small marches 25 hellers wages and 10 hellers *posho* per diem. Runners and guides are supplied through the Jumbes and Akidas. Caution is required with the Matumbi men; the rest are generally trustworthy. Swahili is understood.

VIII. Kilwa District.

Roads.—(1) Beaten road (*durchgeschlagener Weg*), Kilwa–Liwale–Songea.

(2) Beaten road (*durchgeschlagener Weg*), Kilwa–Mohoro. Ferries on the Matandu (2 boats, capacity 30 men each); small streams, bridged, that dry up in the drought.

(3) Kilwa Kivinje–Kilwa Kisiwani, a made road, with foundation: many strong bridges.

<i>Time-Table.</i> —	<i>For Caravans.</i>	<i>For Runners.</i>
Kilwa–Liwale	10 days	5 days
Liwale–Mahenge	13 „	6 „
„ –Songea	15 „	7 „
Kilwa–Wiedhafen	31 „	15 „
„ –Mohoro	3 „	1 „
„ –Kibata	3 „	2 „
„ –Kisiwani (bicycle 2½ hours)	6 hours	4 hours
„ –Mahenge	18 days	9 days
„ –Mponda	18 „	9 „
„ –Lindi	6 „	3 days ¹

Animal Diseases.—In 1911 it was reported that only isolated cases of coast-fever occurred at Kilwa. Kilwa and its immediate neighbourhood, Liwale, in parts, and the residences of the Akidas were the only places free from tsetse. The fly is extraordinarily widespread throughout the District, so that riding-animals are almost certain to succumb.

Obstacles, &c.—On the Matandu there are two ferry-boats. At Kilwa Kisiwani there are many small sailing-boats.

¹ The time for this route may be 1-2 days longer, according to the direction of the wind on the ferry-passages to Kilwa Kisiwani and Mikumbi.

All the rivers may be forded in the dry season, except the Rufiji. On the Liwale route there are now strong bridges at Liwale-mdogo, Milola, and Dapate.

Porters, Guides, &c.—There are plenty of porters—especially from June to December—chiefly at Kilwa town (Wangoni from Songea, Wayao from Rovuma, Waswahili from the Zingino Mountain). In Kilwa the customary pay is 25 heller and 10 heller *posho* per day ; in the interior it is less. Runners and guides are to be found at Kilwa and at the head-quarters of the Akidas. Most of the natives speak Swahili.

IX. Lindi District.

Roads.—The District has quite good broad roads in the areas most frequented by traffic. The Wali and Akidas see that the roads are kept up by the population. The native roads are being gradually widened to 13 ft. The Lindi-Mroveka road was in 1911 partially open to wheeled traffic. The native tracks are often difficult, especially on the plateaus of Mwera and Makonde, partly because of the steep ascents and descents, and also on account of the dense bush. They can, however, be used by troops and bearers.

<i>Time-Table.</i>	<i>For Caravans.</i>	<i>For Runners.</i>
Lindi-Kilwa	6 days	3 days
„ -Mikindani	2 „	1 „
„ -Kyonga	5 „	2 „
„ -Ilulu	5 „	3 „
„ -Jumbe Mfaume	10 „	6 „
„ -Luwira	13 „	7 „
„ -Masasi	5 „	3 „
„ -Chiwata	5 „	3 „
„ -Newala	6 „	3 „
„ -Jumbe Katewere	14 „	7 „
„ -Tunduru	15 „	7 „
„ -Makochera	9 „	4 „
„ -Sasawara	21 „	10 „
„ -Songea	25 „	12 „
Mikindani-Kyonga	3 „	1 „
Jumbe Mfaume-Luwira	3 „	2 „
„ „ -Jumbe Katewere	4 „	2 „
Jumbe Katewere-Sasawara	4 „	2 „
„ „ -Makochera	5 „	3 „
Masasi-Ilulu	3 „	1 „
„ -Newala	3 „	2 „

Animal Diseases.—Tsetse infest Lindi station and the whole District.

Obstacles, &c.—In order to reach Mikindani and Kyonga boats

are necessary. Boats and dhows belonging to the Deutsch-Ostafrika-Gesellschaft were to be had at any time and in sufficient numbers for troops before the present war. In the normal rainy season the above time-table holds good. When the rains are very heavy, even small water-courses may prove an obstruction for a few hours. The Rovuma is always an obstacle in the rainy season, though it is possible to cross it in native boats, fastened together in pairs without outriggers: losses must be allowed for. The Muhuwezi (Mohezi) at its mouth, near Machemba, and farther up-stream, is a serious obstacle during heavy rain. No boats, rafts, or temporary bridges are necessary. They can be constructed everywhere, as there is abundance of material.

Porters, Guides, &c.—The best porters are the Wangoni; next to them the Wayao. The Wangoni are very good, being very little sensible of fatigue: no reserve-porters are necessary. In the District a great many of the Wanyamwezi act as porters for private individuals and are ready to take service at any time. The Wamwera are slowly accustoming themselves to service as porters, but are weakly and unwilling: for every 10 Wamwera porters, 1 reserve-porter is necessary. The other tribes are very unwilling to do porter-service, and are of very little use. They can be hired through the District officials by means of the Akidas. Wages are 30 heller, including food-allowance. It generally takes long to procure bearers at Lindi as the population in and around the town is unsuited to the work. In a hurried mobilization the German authorities intended to fall back upon the labourers in Government employment, on plantation-workers, and on convicts, in order to obtain sufficient reserve-bearers. Runners are, on the whole, trustworthy. Parcels containing money must be packed so that the contents are not known. Good guides and interpreters are always to be had. They are to be ordered through Akidas or Jumbes. Germans sometimes employed these officials for such purposes, as most of them could be regarded as loyal; but in time of war measures had to be taken to prevent desertion.

X. Songea District.

(Not including Wiedhafen Sub-district, for which see Langenburg, below.)

(a) Beaten roads (*ausgeschlagene Wege*):

1. Kilwa-Songea-Wiedhafen. (Bridges over Rovuma, k 28, k 45.)
2. Songea-Gumbiro-Mbegere (Mbejeras?).

(b) Native tracks between the various villages.

<i>Time-Table.—</i>	<i>For Caravans.</i>	<i>For Runners.</i>
Songea—Wiedhafen	6 days	3 days
„ —Langenburg (overland)	16 „	8 „
„ —Ubena Post	15 „	7 „
„ —Iringa	25 „	12 „
„ —Mahenge	12 „	6 „
„ —Kilwa	25 „	12 „
„ —Lindi	25 „	12 „
„ —Liwale	15 „	7 „
„ —Mponda	7 „	3 „
„ —Sasawara	9 „	4 „

Animal Diseases.—No information.

Obstacles, &c.—The Rovuma and the Ruhuhu, except for short stretches in their upper reaches, cannot be crossed on foot at any time of the year; the other rivers can be crossed at many places in the dry season.

Across the Rovuma at Matomondo there is a wooden bridge, about 123 yards long and 8 ft. wide. There is a ford on the Rovuma at Kimbande Hill (Portuguese frontier). Dugout ferries (capacity, 10 men) on the Ruhuhu at its confluence with the Chetewaka, on the Rutukira at Mkekenuri (only in the rainy season), and on the Rovuma at its junction with the Mhukuru. There are also many boats on the Rovuma at the frontier. Wood for building boats, bridges, rafts, &c., to be had everywhere.

Porters, Guides, &c.—The Wangoni are good porters, of great endurance. They can be obtained as volunteers, or else are provided through the sultans. They receive a wage of 20 heller per diem. For the march to and fro between Songea and Kilwa, 9–12 rupees. Trustworthy runners, guides, and interpreters are plentiful.

XI. *Langenburg District.*

(Including Wiedhafen Sub-district, now attached to Songea.)

Roads.—Main roads.

(1) Mwaya—Langenburg—Itaka—Bismarckburg; suited to African vehicles.

(2) Langenburg—Utengule—Iringa; in rainy season the part of the road running through the Usangu steppe is difficult to traverse.

(3) Langenburg—Masoko—Mwakete—the Ubena Post—Iringa. Very mountainous.

(4) Wiedhafen—Songea—Kilwa. Broad road.

Improved roads. Langenburg—Igamba—Tunduma—Deutsch Ikomba: difficult in rainy season on account of the mountain ranges

and many rivers to be crossed. The numerous missions are connected by good wide roads.

Traffic elsewhere on native paths.

<i>Time-Table.</i> —		<i>For Caravans.</i>	<i>For Runners.</i>
Langenburg-Mwaya		2 days	1 day
„ -Wiedhafen			
(a) by steamer, 3 days.			
(b) by boat, 6 days.			
(c) by land	8 „		4 days
„ -Mwakete	4 (3) „		2 „
„ -Itaka	5 „		3 „
„ -Ikomba	10 „		5 „
„ -Bismarckburg	16 „		8 „
„ -Tabora	30 „		15 „
„ -Iringa	18 „		9 „
„ -Songea overland	14 „		7 „
by steamer	9 „		5 „
by boat	12 „		8 „

Animal Diseases.—In 1911 tsetse was found in the following places :

(1) On the middle reaches of the river Kivira, where it is surrounded by light wood and bush forest.

(2) In the woods and bush on the Nyugiro-Mbaka river (New Langenburg-Mwaya road).

(3) In the woods on the banks of the little river Kasiabona.

(4) Probably in the Masukulu wood between New Langenburg and Mwaya. Great herds of buffaloes are declared to be infection-carriers.

Endemic coast-fever in the whole of Kondeland, Bwanyi, Lower Uzafua, Undali, and Urambia.

Obstacles, &c.—On the main roads the rivers are bridged, or have drifts, which are, however, often broken up in the rains.

Between Langenburg and Mwaya, the Mbaka has to be crossed twice, once by means of a large ferry, the other time on a solid bridge. The Lufirio and the Kivira are crossed on the important roads by strong bridges of wood and iron.

Porters, &c.—Good porters can scarcely be had in the District. Except for a few Wangoni, only Nyasa and Rukwa men are employed as porters, but they do not willingly go outside the District. They are requisitioned through the Jumbes. Wages, 25-30 heller a day, including *posho*.

As runners the mountain people, including the Kondeland men, frequently make record journeys, but they are not entirely to be trusted. The Germans considered their own regular post-runners to be probably trustworthy.

XII and XIII. *Bismarckburg and Ujiji Districts.*

Roads.—(a) Made road : Bismarckburg–New Langenburg, 20 ft. wide, partly macadamized. Ferries. On the Kalambo a large strong wooden bridge.

(b) Improved roads : (1) Ujiji–Tabora ; (2) Bismarckburg–Kilimatinde. 10–20 ft. wide ; light wooden bridges of the native type, ferry, or no means of crossing rivers provided.

(c) Negro paths form the only connexion between other places.

Time-Table.—*For Caravans. For Runners.*

Ujiji–Uzumbura (by steamer, 1½ days)		
„ „ (canoe, 3–4 days)		
„ „ (road)	11 days	5 days
–Kasulo	4 „	2 „
–Ruchugi	4 „	2 „
–Mwanza	32 „	16 „
–Tabora	20 „	8 „
–Bismarckburg (by steamer, 4–5 days)		
–Usui (by road)	23 „	11 „
Bismarckburg–Tabora	27 „	13 „
„ –Kilimatinde	33 „	16 „
„ –Iringa	31 „	15 „
„ –New Langenburg	16 „	8 „
Ruchugi–Tabora	16 „	7 „
„ –Kasulo	4 „	2 „

Animal Diseases.—In 1911 tsetse was widespread throughout Uwinza, Ukawende, Ugalla, Ugonogo, and N. Ufipa. In 1915 ‘extensive areas’ in Ukawende and Ugalla were specially reported as infected.

Obstacles, &c.—In the rainy season the rivers of the District form difficult obstacles. The Mlagarasi can be crossed only by boat even in the dry season, except at a few fords : 40–45 yards broad, 12–14 ft. deep : in the rainy season 2–2½ miles broad. On the Tabora–Ujiji caravan road is a ferry in charge of a European. Boats few and bad. Crossing takes some hours. At the Gottorp salt-works there are several large dugout canoes on the Mlagarasi.

The Ruchugi has a depth of 3 ft. or rather more, and a breadth of 30–35 yards, on the caravan road in the dry season. In the rainy season it is not fordable. Two canoes (capacity 6–10 men) for ferry. On the Rugufu a crossing can easily be effected by felling trees on the bank. The Lwichi cannot be forded in the rainy season : on the caravan road is a wooden bridge.

The Ugalla is unpassable on its lower course : no bridges and no boats : construction of papyrus bridges possible. For the post

route Bismarckburg-Kilimatinde a ferry is said to be provided on the Rungwa during the rainy season.

The Saisi is at all times passable.

All rivers have many crocodiles and hippopotami. Wood for construction of bridges and boats grows almost everywhere on the river banks.

Porters, Guides, &c.—Porters are always plentiful in Ujiji (Wanyamwezi, Wasukuma, and natives of the Congo). Mainly professional porters. Monthly pay 5–8 rupees. Porters are engaged directly, and through headmen of carriers. The Waha, who for some years have found employment as salt-carriers from the salt-works to Ujiji, have little strength or endurance: sensitive to strange climate and food, they are unwilling to go into other Districts. They are procured through the sultans.

The tribes of the Bismarckburg District all make useful porters. They take service voluntarily, and receive 25–30 heller per diem. The runners and guides in Uha, Ukawende, and Ugalla are untrustworthy. Those of other regions can be relied on.

XIV. Tabora District.

Roads.—(a) Improved roads (barra barra):

- (1) Tabora-Kilimatinde.
- (2) Tabora-Mwanza *via* Usongo.
- (3) Tabora-Mwanza *via* Zalawe.
- (4) Tabora-Ujiji.
- (5) Tabora-Urambo (road to Uha).
- (6) Tabora-Bismarckburg.

The roads go straight ahead without regard to the formation of the country. There are no bridges or other engineering work. Routes 5 and 6 much overgrown with bush, &c.

(b) Native paths connect all the remaining places.

<i>Time-Table.</i> —					<i>For Caravans.</i>	<i>For Runners.</i>
Tabora-Mwanza	.	.	.	.	17 days	8 days
„ -Shinyanga	.	.	.	.	11 „	5 „
„ -Singida	.	.	.	.	11 „	5 „
„ -Kilimatinde	.	.	.	.	14 „	7 „
„ -Langenburg	.	.	.	.	30 „	15 „
„ -Bismarckburg	.	.	.	.	27 „	13 „
„ -Ruchugi	.	.	.	.	16 „	7 „
„ -Ujiji	.	.	.	.	20 „	8 „
„ -Iraku	.	.	.	.	14 „	7 „
„ -Kondoa Irangi	.	.	.	.	20 „	10 „
„ -Mkalama	.	.	.	.	12 „	6 „
„ -Usuwi	.	.	.	.	18 „	9 „
„ -Uzumbura	.	.	.	.	28 „	14 „

Animal Diseases.—Tsetse was found in 1911 throughout the whole District, except in the few open, unwooded parts of it. The Kilimatinde–Tabora–Ujiji road and the road from Tabora to Mwanza were infested by the flies. Wheeled transport is impossible in the District on account of the tsetse.

Obstacles, &c.—The great steppes are impassable in the rainy season. The larger rivers are only to be crossed by bridges, rafts, and boats. Wood for this purpose is generally to be found on the banks. At the principal river-crossings on the caravan routes there are boats made of bark, which carry 1 man and 1 load.

Porters, Guides, &c.—Porters, mostly professional, are everywhere to be found among Wanyamwezi, Wasukuma, and Wangoni, although lately it has taken two or three days to procure them for large caravans, on account of increased emigration to plantations and railway works. They are paid an average wage of 25 heller a day and 10 heller for food, if engaged for short distances. Reliable runners and guides are obtainable everywhere in peace time.

XV. Dodoma District.

Roads.—The District has some good, broad roads in the regions chiefly frequented by traffic. (On German Road Map of 1911 none of these is marked as passable for wheeled traffic.) The native tracks are generally not difficult. The ascent of the side of the Rift valley is described as troublesome, but nowhere wholly impracticable for troops and porters.

The chief road-centres in 1911 were Mpapwa and Kilimatinde Stations, the administrative centres of the former Districts of the same names. Dodoma Station was then not an important route-centre, and the Mpapwa–Kilimatinde road apparently did not pass through it, but *via* Nyangallo and Matakoto. No information is available for this chapter regarding recent road-construction round Dodoma Station.

Roads on raised tracks of beaten earth 12–16 ft. broad, bridges mainly wooden :

Kilosa–Mpapwa–Kilimatinde.

Mpapwa–Kitangi–Bagamoyo.

„ –Gairo–Toga–Handeni–Pangani.

„ –Kondoa Irangi.

Beaten tracks 6–10 ft. broad :

Mpapwa–Lutalawe–Iringa.

„ –Kidogala–Iringa.

„ –Gairo–Lwita Hill–Kondoa.

[NOTE.—On Road Map of 1911 total time for caravan-marches on Dodoma-Kondoa Irangi road is 32-33 hours, on Dodoma-Iringa road 52-53 hours, on Dodoma-Matako-Kilimatinde road 24-25 hours.]

<i>Time-Table.—</i>		<i>For Caravans.</i>	<i>For Runners.</i>
Mpapwa	-Kondoa, via Nyangallo	10 days	5 days
"	-Bagamoyo	18 "	9 "
"	-Iringa	12 "	5 "
"	-Kwa Mtoro	8 "	4 "
"	-Mamboya	5 "	2 "
"	-Kilimatinde	12 "	5 "
Kilimatinde	-Tabora	14 "	7 "
"	-Mpapwa	12 "	5 "
"	-Iringa	14 "	6 "
"	-Bismarckburg (via Kiwere)	33 "	16 "
"	-Singida	8 "	3 "
"	-Kondoa Irangi (via Usandawi)	8 "	3 "
"	-Iraku (via Singida and Ushuto Lake)	13 "	5 "
"	-Mkalama	13 "	5 "
"	-Zekenke (via Singida)	12 "	5 "
"	-Mwanza (via Zekenke)	21 "	10 "
Singida	-Kondoa Irangi	6 "	3 "
"	-Tabora	11 "	5 "

Animal Diseases.—In the E. part of the District (apart from the 1912 outbreak of rinderpest, which early in 1913 had not yet been stamped out in Ugogo and round Mpapwa), the cattle are subject to catarrhal fever, coast-fever, and symptomatic anthrax (black quarter).

In 1911 tsetse was widely spread in Ukimbu and on the Kilimatinde-Tabora caravan route, but was not then found in the neighbourhood of Mpapwa. In 1915 Itumba was specially reported as infected.

Obstacles, &c.—The Great Ruaha in the S. of the District always contains flowing water, and is at no season everywhere fordable. A few native suspension bridges. The Myombe has only a little water in the dry season. The Kizigo, after heavy rains, may run 12-16 ft. deep, and not go down for several days; no boats, but material for raft-building to be found in the lianas and trees of the woods along the river (dry wood to be selected, green being too heavy). The Bubu-Mtive river can be crossed at several fords, and also at the railway bridge and a wooden bridge. Other rivers—even small brooks—may be impassable for some hours after heavy rain. Wood for building of rafts and bridges generally to be found on river-banks. In exceptionally rainy seasons some steppes may become swamps. The Kimagai lake and Nsuh lake, about 12-13 miles S. of Mpapwa, form impassable swamps in the rainy season.

Porters, &c.—Near Kilimatinde live about 200 Wanyamwezi: 150 at Singida and one day's march E. of Singida (with the Zumbo Mgori, 1911). Of the tribes in the District the Wakimbu make good porters, Wangansi apparently fair, Wanyaturu not suited to this kind of work, Wagogo, Wasagara, Wakaguru, and Wahehe are inferior porters, and mostly unwilling to take service. For loads over 50 pounds, double bearers necessary. Reserve-bearers (one for every 10 men) should be taken. Porters are hired through chiefs or district officials. Wages 30–35 heller per diem, food allowance &c. included. Guides to be obtained through Jumbes: generally good, but precautions should be taken against desertion, especially in the case of Wanyaturu.

XVI. Kondoa Irangi District.

Roads.—Some good roads radiate from Kondoa Irangi and Singida, but in 1911 none were passable for wheeled traffic.

(a) Roads on causeways of beaten earth 12–16 ft. wide, bridges mostly of wood:

Kondoa–Ufiome (for Arusha).

„ –Singida.

„ –Kilimatinde.

„ –Mpapwa.

„ –Handeni–Pangani.

(b) Unmade beaten tracks 6–9 ft. wide:

Kondoa–Lwita Hill–Gairo.

„ –Iraku.

(c) Native tracks as usual.

Time-Table.—

		<i>For Caravans.</i>	<i>For Runners.</i>
Kondoa	–Iraku	8 days	4 days
„	–Mkalama	8 „	4 „
„	–Singida	6 „	3 „
„	–Kilimatinde	8 „	4 „
„	–Korogwe	14 „	7 „
„	–Arusha	12 „	6 „
„	–Mwanza	20 „	10 „
„	–Pangani	20 „	10 „
„	–Tabora	20 „	10 „
Mkalama	–Iraku	5 „	2 „
„	–Zekenke	3 „	1 „
„	–Singida	5 „	2 „
„	–Shinyanga (<i>via</i> Zekenke).	6 „	3 „
„	–Mwanza	14 „	7 „
„	–Tabora	12 „	6 „

[Last three roads are not passable in very heavy rains. The Wemkere steppe must then be avoided by a circuitous route.]

[*Note*.—Kondoa Irangi–Dodoma 32–33 hours for military caravan, according to German Road Map of 1911.]

Animal Diseases.—Apart from the 1912 epidemic of rinderpest which was still raging round Kondoa Irangi and Umbulu in 1913, the cattle are subject to catarrhal fever, coast-fever, and symptomatic anthrax (black quarter). In 1911 tsetse was found in the following places near Kondoa Irangi: on both roads from Kondoa to Ufiome, on the road by the Bubu river, and on the road from Uwasi *via* Kizese to just before East Ufiome. Between these two roads there was then a mountain path free of tsetse leading from Wassi bin Salim by Nefino, Salanga, and Bonka to West Ufiome. On the road from Mkalama to Iraku tsetse was only found on a stretch four hours long which begins $3\frac{1}{2}$ hours from the post at Mkalama and goes as far as the rise on to the Mbulu plateau near the Hohenlohe rift valley. In Iramba and Iyambi consumption is frequent among sheep and goats.

Obstacles, &c.—The Bubu can be crossed at fords. The streams of the District are not serious obstacles except immediately after a heavy fall of rain, when even small brooks may become unfordable for some hours. In exceptionally rainy years many steppes are under water, and in parts can only be crossed in boats which have to be built for the purpose. Material for timber or bark boats is obtainable. The Wembere steppe, 6–8 hours' march in width, becomes impassable for weeks together in a heavy rainy season. Tabora and Mwanza then have to be reached by a *détour* to the S. *via* Ikungu. Near Mkalama there is an abundant supply of borassus palm for boat-building. Near the village of the Jumbe Kitalala (1911) in Usukuma (W. of the Wembere steppe and close to the edge of the Rift valley) there is a ferry on the Bulatti (or Ulati) to connect Zekenke with Mwanza, but this cannot be used when there are considerable floods on the Wembere steppe. Special difficulties as regards supplies and water on Masai steppe (see p. 263).

Porters, &c.—A few Wanyamwezi and 50 good Wanisanzu porters at Mkalama. Many Wanyamwezi and Wasukuma among the miners at Zekenke. Wasandawi very willing but weakly. Wanikamba and apparently Warangi unwilling to take service. They should not be given loads of more than 50 pounds unless double porters are taken. Payment, 30–35 heller per diem: carriers to be procured through the chiefs. Masai and Wafiome do not make good porters, but the Masai are excellent runners, fast, intelligent, and to be trusted even alone by night. Money should be carefully packed, especially when entrusted to an Iramba runner. Wafiome must be watched closely when taken as guides,

as they may desert. Good guides and interpreters on the Masai steppe in 1911: Jumbe Kirwa, N. of Kondoa; Jumbe Zemdiri of Kijungu; Abdullah, the former Jumbe of Toga; and the Jumbe of Iteri in Nguru.

XVII and XVIII. *Moshi and Arusha Districts.*

Roads.—In the summer of 1915 the Germans constructed a motor road from Moshi in the direction of Taveta. There seems also to be a motorable road from Moshi to Mombo.

The following account dates from 1911: In the settlement district are numerous wide roads passable for wheeled traffic, with wooden bridges; cattle tracks and paths with primitive native foot-bridges are found in the inhabited areas. On the principal stretches of steppe-country are paths, and in places caravan roads; otherwise pathless steppe and bush, where, however, tracks made by migrating game, especially rhinoceros, can sometimes be used.

Time-Table.—

	<i>For Caravans.</i>	<i>For Runners.</i>
Moshi-Arusha	4 days	2 days
„ -British frontier (Taveta)	2 „	1 „
„ -Korogwe (the Pangani route)	16 „	7 „
„ -Korogwe (direct)	12 „	6 „
„ -Wilhelmstal	10 „	5 „
„ -Voi (British railway station)	6 „	3 „
„ -Sonyo	14 „	7 „
Arusha-Iraku	8 „	4 „
„ -Iraku (<i>via</i> Engaruka)	10 „	5 „
„ -Kondoa Irangi	12 „	6 „
„ -Umbugwe	5 „	3 „
„ -Ngorongoro	8 „	4 „
„ -Engaruka	5 „	2 „
Iraku-Kondoa Irangi	8 „	4 „
„ -Mkalama	5 „	2 „
„ -Singida	6 „	3 „
„ -Ngorongoro	5 „	2 „
„ -Tabora	14 „	7 „
Ngorongoro-Ikoma (<i>via</i> the Zerengeti steppe)	9 „	5 „
„ -Sonyo	6 „	3 „
Engaruka-Sonyo	5 „	2 „
Sonyo-Ikoma	7 „	4 „

Animal Diseases.—In 1915 tsetse was reported on both sides of the Anglo-German frontier:

(a) On Voi-Makatau road up to mile 26 and on the road between Salaita Hill and Taveta.

(b) On both banks of the Lumi river from Ziwani swamp to Lake Jipe.

(c) On the Mzima line up to and including Ziwani swamp and Rombo river.

(d) On a belt of some 15 miles in breadth stretching from Lake Jipe to a point half-way between Moshi and Arusha.

(e) On the Longido line, possibly (but not probably) between Engare Nairobi and the Moshi-Arusha road. According to a doubtful report the fly is at Engare.

Tsetse was reported in 1911 to be prevalent in the following localities :

(a) In the virgin forest of Rau between Arusha Chini and Kili-manjaro, especially during the rainy season.

(b) On the Arusha-Umbugwe route, on the last day's march before Umbugwe.

(c) On the side of the Rift valley, wherever there is water.

(d) Between Arusha and Ufiome on the Tarangire (Balanga) stream, between Kikodi camp and the Ufiome boundary.

(e) On the route from Arusha to Umbugwe *via* Kisale, from the Tarangire stream till near Lawa-ya-Zereri.

(f) In Sonyo.

(g) On the roads from Moshi to the coast and to Voi.

Obstacles, &c.—During heavy rains bridges and foot-bridges are often washed away. Boats can only be used with difficulty on the swift mountain streams. When the rivers are high it is almost impossible to cross their upper reaches, if bridges or foot-bridges are destroyed. At the southern end of Lake Manyara, even during the dry season, there is an extensive and deep marsh area. A corduroy bridge makes it possible to traverse this marsh, and there are also fords to be found in it. In the S. it can be skirted by a *détour* to S. At Lake Jipe is an extensive marsh region which is very difficult to cross. On the Pangani, Mkomazi, &c., see p. 217 and p. 120.

Porters, &c.—The Masai cannot be used as porters ; they consider the work degrading. Wajagga and Wapare are bad on the steppe. Warusha, Wameru, and Wataturu are better. The Wambugwe are good porters, the Wambulu good in their mountain country. It is difficult to obtain porters in large numbers. The natives settled in the District rarely offer for service. They must be engaged through the administrative authorities. Wages 35–40 heller a day, which includes keep. In Iraku the rate is lower. Good runners who know the country are to be obtained from every chief and are, as a rule, reliable. Warusha are inclined to steal ;

money should be carefully packed. The Wandorobbo, Watindiga, and Masai make excellent guides in steppe country. The Wandorobbo and Watindiga are only to be obtained by means of other tribes. The statements of the guides should be tested as frequently as possible, since they often do not tell the truth. Harsh treatment is not advisable. In cases of necessity the guides should be secured, if there is any suspicion that they wish to desert.

XIX. Mwanza District.

Roads :

(a) Improved roads : (1) Mwanza-Shinyanga-Tabora. (2) Mwanza-Msalala-Tabora. Both suitable for laden transport in the dry season.

(b) Primitive caravan roads : (1) Mwanza-Ikoma. (2) Mwanza-Shirati. (3) Mwanza-Magalla-Iramba. (4) Nera-Zengerema-Magalla-Meatu-Ngorongoro. (5) Shirati-Ikoma. (6) Uzinja-Buchoza-Emin Pasha Gulf-Usui-Bukoba.

(c) Good native track : Ikoma-Olgoss-Oliondo-Sonyo to Arusha and Ngorongoro.

(d) Besides these, ordinary native tracks, which are passable for machine-guns in the flat south-eastern part of the District.

<i>Time-Table.—</i>	<i>For Caravans.</i>	<i>For Runners.</i>
Mwanza-Bukoba	21 days	10 days
„ -Usui	14 „	7 „
„ -Uzumbura	28 „	14 „
„ -Ujiji	32 „	16 „
„ -Ruchugi	28 „	14 „
„ -Tabora	17 „	8 „
„ -Kilimatinde (via Zekenke)	21 „	10 „
„ -Mkalama	14 „	7 „
„ -Iraku	18 „	9 „
„ -Pangani	40 „	20 „
„ -Ikoma	10 „	5 „
„ -Shinyanga	6 „	3 „
„ -Shirati	14 „	7 „
„ -Kondoa Irangi	20 „	10 „
Ikoma-Iraku through the Zerengeti steppe	14 „	7 „
„ -Iraku (via Sonyo)	18 „	9 „
„ -Sonyo-Arusha	17 „	8 „
„ -Shirati	8 „	4 „

Animal Diseases.—In 1911 the tsetse danger existed in the extensive bush-steppes on the Simiyu, and thence eastwards to Ikoma. The Mwanza-Ikoma road from the Nasa country in Usukuma to Ikoma and the Ikoma-Shirati road as far as Nyamotoke were badly infested with tsetse. The Mwanza-Meatu-Ngorongoro route was

also believed to be infected. *Glossina morsitans* was found in all Uzinja. Coast fever in Mwanza.

Obstacles, &c.—On the Simiyu and Mara there are at the crossings of the caravan roads a few small canoes which can serve as ferry-boats. (In 1915 there was a bridge over the Mara, which the Germans broke down.) All other rivers are unfordable only for a few hours at a time, as they fall quickly. It is useless to attempt to build native or light bridges on a rapid flood. Wood for rafts, canoes, and bridges can be found close to the rivers.

Porters, Guides, &c.—The Wasukuma are very good as porters, strong and competent. They are easily procured by voluntary enlistment through carriers' headmen, or will go at the order of the Sultan. The pay is 4–8 rupees a month. The other tribes of the District do not make good porters. Among the Washashi the people of the Sultanates of Ikoma and Ikisu are most useful. They must be procured from the Sultans. They carry only light burdens, are easily upset by climate and hardships, and are unwilling to go to strange districts: they frequently desert. The Washashi receive 15 heller a day besides food, &c., but less for long marches. Wagaia porters are stronger than the Washashi, but are also unpractised at the work and difficult to get into strange country. They are procured through the Sultan. Many reserve bearers are always necessary. Besides the regular runners permanently attached to the garrisons, the messengers and guides provided by the Sultan, including the Wandorobbo, are regarded by the Germans as trustworthy. The riff-raff in and near the larger places should not be employed. In war-time several messengers should be sent to carry a message by different routes.

XX. Iringa District.

Roads.—The District has good broad roads in the areas most frequented by traffic.

<i>Time-Table.</i> —	<i>For Caravans.</i>	<i>For Runners.</i>
Iringa–Kilosa	12 days	5 days
„ –Mpapwa	12 „	5 „
„ –Kilimatinde	14 „	6 „
„ –Mahenge	12 „	5 „
„ –the Ubena Post	10 „	4 „
„ –Songea	25 „	12 „
The Ubena Post–New Langenburg	9 „	5 „
„ „ –Songea	15 „	7 „
„ „ –Masoko	8 „	4 „
„ „ –Mahenge	15 „	7 „

Animal Diseases.—Of cattle diseases prevalent in 1911 must be mentioned coast-fever in the immediate neighbourhood of Iringa, anthrax in the small cattle in one part of Ugogo (Sadallah), and, finally, tsetse in the NE. part, as far as the Great Ruaha, beyond which the tsetse had then penetrated only from Itakata in the direction of the Madibira mission.

Obstacles, &c.—Generally speaking, communication is easy in the centre of the District and in Ubena all the year round. In Usangu floods cause considerable obstacles during the rainy season. In the NE. of the District movement is difficult, except on the Kilosa road. The NW. part of the District has comparatively few roads (see under Dodoma District). It is sparsely populated and has little water. Between Sadallah and Mpwasa there is a stretch of dense waterless and trackless thorn-bush.

The Ruaha, Mbali, Kimani, and Chimala can generally be crossed, especially during the rainy season, only by some few of the native suspension-bridges, by a few fords, or in boats. The natives have no boats or rafts.

Porters, &c.—There is no difficulty in obtaining porters. The Wabena are particularly adapted for the work, although they are not a particularly strong race. The German Military Post at Ubena is always in a position to enlist any number. The Wahehe and the Wasangu are unwilling to do porters' work. Wages in 1911, 35 heller a day. The people connected with the permanent runner service, called station runners (*Stationsboten*); are reliable. Runners, good guides, and interpreters are to be had everywhere.

XXI. Mahenge District.

Roads.—From Mahenge there are three or four broad roads to the stations of the neighbouring Districts. Communication between them is provided by native tracks.

The ascent to the mountainous part of the District is troublesome, but nowhere impossible for troops and porters.

(The Ulanga and its tributaries provide water-routes of little importance (canoes). Owing to its rapids the Ulanga is navigable only as far as the old Ulanga station.)

<i>Time-Table.</i> —				<i>For Caravans.</i>	<i>For Runners.</i>
(i)	Mahenge—Morogoro	.	.	15 days	7 days
(ii)	" —Kilosa	.	.	15 "	6 "
(iii)	" —Liwale	.	.	13 "	6 "
(iv)	" —Iringa	via	Ifakara	12 "	5 "
(v)	" — "	"	Gwira	13 "	6 "
(vi)	" —Lupembe	"	Masagati	13 "	6 "
(vii)	" —Songea	"	Mgende	12 "	9 "
(viii)	" — "	"	Pitu	16 "	9 "
(ix)	" —Kilwa	"	Maragandu	18 "	9 "
(x)	" — "	"	Shuguli Falls	18 "	9 "
(xi)	" —Ubena	.	.	15 "	7 "

Animal Diseases.—In 1911 tsetse was found everywhere in the District except in a few places in the SW. In 1915 it was reported to be present in 'extensive areas'.

Obstacles, &c.—Roads (i) to (v) above are not practicable for troops without means of crossing rivers.

Roads (vi) to (ix) above are not practicable in the rains for troops without means of crossing rivers.

In normal rainy seasons the above time-table holds good. Even small water-courses when in spate may be impassable for hours.

In the rainy season all the larger rivers of the District are impassable without some means of crossing; this also applies to the Ulanga river and to most of its tributaries in the dry season.

The greater part of the roads are knee- or breast-deep in water in the rainy season, particularly the roads in the Ulanga plain.

On the Ulanga and its tributaries there are some canoes of varying capacity (up to 20 men or 30–40 loads).

In 1911 the following canoes were known to be available :

- On the Ruaha (Kidatu), 1.
- " Ulanga (Ifakara), 2.
- " Ulanga (Gwira), 1.
- " Rufiji (Mkamba), 1.
- " Luwegu (Mponda), 1.

Also one on the upper Ulanga, one on the Ruhuje, and one on the Mnyera. There are many small canoes on the rivers of the District, most of which have only a low carrying capacity: many of them are in very bad repair.

Material for tree and bark boats and also rafts is to be had in the country S. and SW. of the military station.

Porters, &c.—The Wabunga and Wangoni provide the best porters, and their capacity is similar to that of the Wanyamwezi.

The German authorities intended in the event of a rising to employ the Wapogoro, who live nearest the station, and who do well in the mountains, but often collapse on the plains.

The capacity of the Wabena and Wadamba is lower, but is fair in the plains.

Porters are generally recruited through the chiefs. Wages 6-9 rupees per month.

The natives who are employed as runners by the military station were considered by the Germans as 'comparatively trustworthy'. Good guides can be obtained everywhere through the chiefs.

XXII. *Bukoba District.*

Roads.—(a) Improved roads :

- (1) Bukoba-Marienberg-Kisenyi.
- (2) „ -Kifumbiro-Mtukula-Masaka-Entebbe.
- (3) „ -Banja-Niangoma.
- (4) „ -Usui (route to Uzumbura).
- (5) „ -Bwango (route to Mwanza).
- (6) Usui-Rusirayombo (route to Mwanza).

(These roads have generally a raised earthen track 12-16 ft. broad, with ditches at the side, and wooden bridges.)

(b) Beaten tracks :

- (1) Bukoba-Kifumbiro-Kanyonza.
- (2) Kanazi-Ishangu Ferry.
- (3) Usui- „ „
- (4) „ -Ukuzura.
- (5) „ -Bumanilo Ferry.
- (6) „ -Nyatakara-Mission Station of St. Michael.
- (7) „ -Nyemirembe.
- (8) „ -Nyamgeju.
- (9) Keza-Kibwera.
- (10) „ -Migera Ferry-Ishangu Ferry.
- (11) „ -Lutalindwa.

These tracks are about 10 ft. broad, without special engineering work.

(c) Native paths : everywhere between the various villages.

<i>Time-Table.—</i>		<i>For Caravans.</i>	<i>For Runners.</i>
Bukoba-Kagera (Ishangu ferry)	.	6-7 days	3-4 days
" -Kigali (Ruanda) ¹	.	14 "	7 "
" -Kisenyi (Lake Kivu) ¹	.	23 "	10 "
" -Uzumbura (via Kigali) ¹	.	29 "	14 "
" -Kifumbiro Post	.	2 "	1 "
" - " -Mtukula	.	4 "	2 "
" -Usuwi Post (land route)	.	9 "	4 "
" - " " (by boat) ²	.	6-7 "	
" - " " (by small steamer) ²	.	3-4 "	
" - " " -Mwanza	.	24 "	12 "
" -Mwanza, direct by land	.	21 "	10 "
" - " by boat along coast	.	10-11 "	
" - " by small steamer	.	2-3 "	
" - " by British steamer in peace time	.	10 "	
" -Usuwi-Tabora	.	28 "	14 "
" - " -Uzumbura	.	28 "	14 "
" - " -Ruchugi	.	30 "	15 "
Usuwi-Nyemirembe (Victoria Nyanza)	.	12 hours	7 hours
" - " -Kigali (Ruanda) ²	.	12 days	6-7 days
" - " -Ruuwu (Ruanilo ferry)	.	5 "	3-4 "
" - " -Kifumbiro	.	10 "	5 "
" - " -Mwanza	.	4 "	7 "
" -Tabora	.	18 "	9 "
" -Ujiji	.	23 "	11 "
" -Uzumbura	.	19 "	9 "
" -Bukoba	.	9 "	5 "

Animal Diseases.—Tsetse was found throughout the District in 1911.

Obstacles, &c.—The Kagera, the Ruuwu, and the Ngono can only be crossed in ferries or boats. The most important ferries are :

- (1) In W. Usuwi, Ruanilo ferry.
- (2) On the Ruuwu, Bugufi ferry, rather over $\frac{1}{2}$ mile (1 km.) S. of the junction of the Nyawarongo with the Ruuwu.
- (3) On the upper course of the Kagera, Migera ferry.
- (4) On the middle course of the Kagera, Ishangu ferry.
- (5) On the Bukoba-Kigali-Lake Kivu road :
 - (i) Kanyonza ferry at the NW. bend of the Kagera.
 - (ii) Nsongezi ferry 25 miles E. of the above.
 - (iii) The ferry at Kifumbiro Post (6 dugouts ; capacity of each 10-12 men with loads).

Except the British ferry at the mouth of the Kagera, there are no ferries on the lower course of the river, as the German authorities

¹ Including one day for crossing the Kagera.

² Via Niemirembe.

² Including time for crossing the Kagera.

wished to secure a better control of the frontier traffic and to take precautions against the introduction of sleeping sickness.

There is a bridge over the Ngono at Ibwera (Bukoba-Kigali road), and another was being built in 1911 on the Bukoba-Kifumbiro road.

Where there are no ferries, papyrus rafts can be made.

The ferry-boats can hold 12 men; the one at Ishangu 25-30 cwt.

Porters, &c.—Porters are partly to be had as volunteers at Bukoba station, and partly to be obtained from the Sultans through the *katikiro*. Even a large number can be raised without difficulty. The natives can carry up to 55 lb.; for heavier weights double bearers are necessary.

As the roads are often stony, the bearers need sandals, or they drop behind if they have not got them. There is a thriving carrying traffic with Ruanda, and therefore there exists in the District a large class of porters who do well even in mountainous country. Monthly pay, 5-6 rupees (food included). Reliable guides, runners, and interpreters are to be got everywhere.

XXIII. Ruanda District.

Roads.—There are only native tracks, of fairly good quality. The country near the roads is generally traversable.

<i>Time-Table.</i>	<i>For Caravans.</i>	<i>For Runners.</i>
Kigali-Uzumbura	14 days	7 days
„ -Ishangi	11 „	5 „
„ -Kisenyi	7-8 „	4 „
„ -Mruhengeri	5 „	2 „
„ -Mpororo (Kisiliwombo)	5-6 „	3 „
„ -Ishangu Ferry	4 „	2 „
„ -Ishangu Ferry-Bukoba	11 „	6 „
„ -Migera Ferry	6 „	3 „
„ -Kaseke Ferry	6 „	3 „
„ -Kaseke Ferry-Usuwi	12 „	6 „
„ -Nyanza (residence of Sultan Msinga)	3 „	2 „
Ishangi-Uzumbura	7 „	3 „
„ -Chiwitoke	4 „	2 „
„ -Kisenyi, by boat, 22 hours.		
„ -Kisenyi, by road	8 „	4 „

Animal Diseases.—It was reported in 1911 that there were many tsetse-flies along the Kagera between the mouth of the Ruwuwu to the Kanyonza ferry in Mpororo, but it was still uncertain whether they had communicated the disease. There was a catarrhal fever among the cattle of the District.

Obstacles, &c.—On the mountains, the going is impaired in the

rainy season by the slipperiness of the paths on the steep slopes. The virgin forest and bamboo woods are scarcely penetrable in the rainy season. The Mrushasi swamp can be forded only at the N. end. The larger rivers must be crossed by ferry-boats. On the upper course of the rivers and on Lake Kivu there are many reliable canoes. The larger of them carry about 7 men and 7 loads. On the middle course of the Kagera, and on the lakes in the interior and in volcanic craters, there are only small and poor boats to be had. At the Ishangu ferry on the main route to Bukoba there is a European boat, which carries 30 persons and 30 loads, the property of the Sultan Kahigi (1911), in the Bukoba District.

On the Akanyaru, Nyawarongo, and middle course of the Kagera, there are canoe ferries at short intervals. On the lower course of the Kagera, from the mouth of the Ruwuu to Kanyanza, ferries are to be found only at Migera, Ishangu, and Kanyanza. In peace time, ferry-boats &c. could be obtained through the Sultans.

An aluminium boat at the German Residency. Bamboo and papyrus for building ferry-boats and bridges are to be found everywhere. Very strong floating bridges for crossing papyrus swamps can be made with layers of papyrus (see p. 305).

Porters, &c.—The Wanyaruanda are only capable of serving as porters for 1 or 2 days. They are unwilling to leave the immediate neighbourhood of their homes, and they suffer from fatigue on longer marches. The pay for short distances is in beads; for marches of 5–6 days it is 1 *upande* (see Appendix II) *Americano* (?). In case of need they may be engaged through their chiefs for a prearranged pay. They frequently desert. The giving out of plentiful meat rations is recommended.

For large caravans it is advisable to procure porters from the Waheia in the Bukoba District, or from the Wanyamwezi or Man-yema of Ujiji or Uzumbura.

Runners and guides can be obtained through the chiefs. Their reliability is not very great.

XXIV. *Urundi District.*

Roads.—The formation of the mountains, which are often rugged, and the numerous marshes make movement generally difficult. The use of riding-animals is often impossible. 5–6 hours' march must be reckoned as the longest possible for porters.

Many native tracks, skilfully adapted to the country. Good road from Uzumbura to Ishangi. Wide road from Uzumbura to the E. nearly as far as the summit of the pass (about 5 hours). Roads

about 2 yards wide, kept cleared, run from Uzumbura by Mtara to Kigali, and from Uzumbura by the Mugeru and Rugali Missions to Bugufi ferry.

<i>Time-Table.—</i>		<i>For Caravans.</i>	<i>For Runners.</i>
Uzumbura—Mugeru Mission		5 days	3 days
„ —Bukoba		29 „	14 „
„ —Inbuye (Sultan Mutaga)		4 „	2 „
„ —Kifumbiro		28 „	14 „
„ —Kaninya Mission		9–10 „	5 „
„ —Mwanza		28 „	14 „
„ —Kagora Ferry (Kisaki)		12 „	6 „
„ —Tabora		28 „	14 „
„ —Chiwitoke		3 „	1 „
„ —Ishangi		7 „	3 „
„ —Kigali		14 „	7 „
„ —Uсуwi (Byaramulo Post)		19 „	9 „
„ —Urambi, by boat, 1 day			
„ —Rumonge, by boat, 2 days.			
„ —Nyanza, by boat, 3 days.			
„ —Ujiji, by steamer, 1½ days.			
„ —Ujiji, by land	11 „		5 „
„ —Uvira, by steamer, ½ day.			
Mugeru Mission—Muyaga Mission	5 „		2 „
„ —Rugali Mission	4 „		2 „
„ —Kaninya Mission	4 „		2 „
Rugali Mission—Kaninya Mission	3 „		1 „
„ —Bugufi Ferry	3 „		1 „
Muyaga Mission—Rugali Mission	4 „		2 „
„ —Tabora	20 „		10 „

Animal Diseases.—No information.

Obstacles, &c.—The Ruwuwu, Kagera, and Mlagarasi are generally only passable by boat or ferry. (Capacity of ferry-boats at principal crossings of Ruwuwu, 4–10 men : small boats at Kagera ferry.) Boats may always be reckoned on in peace time. Ferry-boats can be made from papyrus and banana-stems. Swamps generally passable by papyrus causeways (p. 305). Collapsible boats too light in rainy season for the strong current of the large rivers. It is well to take a long rope, with which to tow boats, and to give men support against the stream in deep fords. It is very difficult, especially in the rains, for porters to ascend the Tanganyika mountains (Randberge), elsewhere than on a main road.

Porters, Guides, &c.—At Uzumbura there are always enough Warundi for porters, some of them professional bearers who come willingly. They are said to be good if loads are not too heavy (not over 55 lb.), and when it is only a question of transport for

short distances, or from Uzumbura to Ruanda, or from Uzumbura to the Kivu lake. The Warundi are very unwilling to go outside the District.

Pay: for a journey to Bukoba, 6-7½ rupees; to Kigali, 3-4 rupees; to Chiwitoke, 1.25 rupees; to Ishangi, 2.50 rupees. Payment by days is reckoned at 25 heller, inclusive of *posho*.

The armed guards of the Watwale (see p. 109) in the Rusizi plain can be employed as runners. Guides are often difficult to get. In peace, in case no guides can be enlisted, each Mtwale must provide guides to the neighbouring Mtwale.

CHAPTER XII

LANGUAGE AND VOCABULARIES

THE subject of language in German East Africa is a comparatively simple one, and can be dealt with briefly.

Throughout the whole of Africa south of a line drawn from the Cameroons (roughly on lat. 4 deg. N.) to Uganda, and thence in a south-easterly direction to a point on the east coast not far north of Mombasa, the native population (with relatively small exceptions) use in various forms a single type of language, called Bantu. The dialects are very numerous and may be reckoned by hundreds. They exhibit every degree of difference among themselves, from close similarity to wide diversity. Even neighbouring tribes, when separated by tribal feuds or the physical features of the country, may only with difficulty understand each other. But the grammatical type of self-expression, the mould into which all thought and speech runs, is fundamentally the same, and one which is for the most part simple, clearly marked, and characteristic, and for the size of the area singularly uniform. Moreover, a very considerable number of words in common use, and denoting common objects and actions, are ultimately traceable under various disguises to forms common to a large proportion of the dialects spoken and point to a common original form, from which they are descended as from a common ancestor. For instance, the word 'Bantu' itself, originally chosen by the famous philologist, Dr. W. H. I. Bleek, of South Africa, as the name of this family of human speech, is used in one form or another in a large proportion of its dialects to mean 'persons' or 'people', from the Cape to Uganda and from the mouth of the Congo to Zanzibar.

German East Africa lies in the Bantu area and illustrates the above remarks. Within it dialects may be reckoned by dozens, according to the standard or definition of dialect held in view. But whatever their differences in words, phrases, and pronunciation, the underlying grammar or scheme of self-expression is, broadly speaking, the same. It follows that any dialect may be used as a key to all, and used as a groundwork on which to build, or as a standard of comparison with which to approach other dialects and note their characteristic differences. There is, however, one,

and only one, notable exception in German East Africa. The Masai tribe is an element intruded from the north of the northern boundary line of Bantu, as indicated above, and uses a quite different type of speech, which is commonly described as Hamitic. More will be said of this tribe below.

Something may now be briefly noted as to Bantu dialects of German East Africa, their relative importance for practical purposes of intercourse and government, the best way of approaching them, and the choice of a dialect best fitted for use as a key to further knowledge. As to this last, there can be no doubt. It is the dialect called Swahili.

Swahili is the form of Bantu spoken by the mixed race of African natives and Arabs who inhabit the east coast of Africa, and in particular that part of it which lies between Lamu in British East Africa, somewhat north of Mombasa, and Cape Delgado, on the boundary of Portuguese East Africa southward. Swahili is used also along the coasts of Madagascar, South Arabia, and even India. In particular it is the language of Zanzibar, still far the largest town between Cairo and Natal, with at least 100,000 inhabitants; of Mombasa, the growing seaport of British East Africa and base of the railway leading to Uganda; and of Dar-es-Salaam, the recently-built seat of the German administration, with the harbour from which the railway recently completed runs through the centre of German East Africa to Ujiji on Lake Tanganyika. These facts alone would stamp Swahili as a dialect of first-rate importance, but it has far stronger claims. Swahili is, and has been for years before railways were dreamt of, a kind of 'lingua franca' over the whole region between the East Coast and the three great lakes lying at distances of from 500 to 700 miles inland from Zanzibar, Nyasa (to the south), Tanganyika (central), and Victoria Nyanza (on the north). In this vast area, it is more especially the 'lingua franca' of German East Africa. More than this, islands (so to speak) of Swahili-speaking natives are found far to the west of the lakes, e. g. in North Rhodesia, and Swahili is understood and in use down the whole course of the Congo river to the Atlantic Ocean. It is an officially recognized language of government and administration in British East Africa, German East Africa, Nyasaland, and even the Belgian Congo.

The reason for the extraordinary range of Swahili is a simple one. Before the partition of Africa took place, only a few years ago, Zanzibar was for many years, if not centuries, the one door through which passed all commerce and communication between East and Central Africa on the one hand, and the outer world. Swahili, as

the language of Zanzibar, was the language of trade, and penetrated everywhere on the lines of the trade-routes, which radiated from and converged upon Zanzibar, with the added prestige of being the vehicle of Arab ideas and civilization. Commerce in those days was based upon the traffic in slaves. Zanzibar was one of the great slave-markets of the world. Rich Indian firms supplied guns, powder, cloth, beads, and wire for the caravans led by Arabs and Swahili into the interior, and reaped a rich harvest from the slaves and ivory with which they returned. Now, of course, the slave trade has disappeared, but its effects remain, and one of the most important is that persons acquainted with Swahili can make their way easily in most parts of German East Africa, and may count on finding in almost any village some at least by whom they would be understood.

Swahili, as a means of communication with Bantu natives, has a double advantage. Its grammar is purely African, and this means that the form of every sentence or expression is recognized at once as familiar by a native, even if the actual words are less so. On the other hand the grammar has been simplified in Swahili to suit the foreigner (mainly the Arabs of the coast), and this makes it easier to learn. Secondly, the vocabulary has been enriched by drawing on the inexhaustible resources of Arabic, and drawing so freely and for so long a time that in ordinary Swahili a large proportion of words in common use are Arabic in origin, and that not only in Zanzibar and the coast, but in the far interior. Fortunately, in the process of incorporation with Swahili, Arabic words tend rapidly to lose (except in Zanzibar itself) all difficulty in pronunciation, difficult consonants in particular being softened, modified, and adapted to suit native (and indeed English) tongues. The advantage of being able to draw upon the stores of an Arabic dictionary for the expression of ideas and objects new to Africans is obvious.

The general result is, that Swahili is not only easy to pronounce, but also easy to write with the English alphabet by observing a few simple rules. It may also be fairly said to be easy to learn to the extent of being practically useful. Though proper pronunciation can, of course, only be acquired by listening to natives themselves and catching their accent and intonation, much can be learnt from books, and of these there are abundance. In them all native words are spelt phonetically—that is, in the way best recalling in English letters the sound of the words as spoken—and they range from Burt's simple *Grammar and Vocabulary of the Swahili Language* (including useful exercises and key), and the phrase-book

of Swahili published at the Government *Gazette* Office in Zanzibar, to Bishop Steere's standard *Handbook of Swahili and Swahili Tales with Translation*, and to the more elaborate and most complete and useful German *Swahili-Sprachführer, von Walter von St. Paul Illaire*, containing lists of words, idioms, and conversations on many subjects, specially meant for the use of officials in German East Africa.

It remains to glance at other dialects of Bantu spoken in German East Africa, and at the case of the Masai.

The relative importance of these dialects for practical purposes depends largely on the position of the tribes using them, their accessibility by well-established routes, their numbers, fighting qualities, and power of dominating a wide area of country. At the beginning of the period of German administration (1885-90), the most warlike tribes were the Gwangwara in the south-east, the Hehe in the south (central), and the Masai on the north (central). The Gwangwara consist of a nucleus of Zulu invaders from South Africa enlarged and changed by the incorporation of natives from neighbouring tribes conquered or raided by them. Their warlike activities have now been checked and their dialect is not important. The Hehe revolted against their German masters and have been crushed by them. The Masai language is (as has been said) of a type quite different from Bantu, and would be of little use, except as a special study and within the limits of the land occupied by the tribe. The Masai were broken down some 30 years ago by a plague which destroyed for the time the cattle on which they lived at the expense of their neighbours, and compelled them to exchange their warlike habits for a more peaceful mode of life.

Other dialects may be briefly enumerated and roughly located with reference to the central line of the German railway already alluded to. On or near this line, beginning from the coast westward, lie the Mrima (a dialect of Swahili), Sagara, Gogo, and Nyamwezi. Nyamwezi is the language of a great tribe or group of tribes, which has for many years past furnished large bodies of porters accustomed to carry imports of all kinds into the interior. They worked regularly in gangs of thousands, both as slaves and for wages, and were thus in frequent contact with the scenes, ways and language of the coast. This fact in itself makes their dialect of minor importance, simply because so many are well acquainted with Swahili. North of the railway, beginning from the coast, will be found Bondei, Nyika, Shambala, Zigula, Pare, Lundi, Sukuma (south of Lake Victoria Nyanza). South of the railway, beginning from the coast, are Zaramo, Mwera, Konde, Gindo,

Henga, Hehe, Gwangwara, Sango, and (on the boundary of North Rhodesia) Nyamwanga, and Mambwe. Of many of these dialects elementary grammars and vocabularies, and some on a more elaborate scale, chiefly by Germans, are obtainable from booksellers or from missionary societies concerned with East Africa, such as the Society for the Propagation of the Gospel in Foreign Parts (Northumberland Avenue), the Church Missionary Society (Salisbury Square), and Universities Mission to Central Africa (9 Dartmouth Street, Westminster). Last's *Polyglotta Africana Orientalis* gives no less than 48 short lists of words and phrases in as many dialects of Eastern and Central Africa. Sir H. H. Johnston's *Comparative Grammar of Bantu* (now in the press) will furnish a much fuller list of words and sentences in at least 240 dialects of Bantu.

Note that in other parts of this book the names of these tribes are written with the native prefix Wa-, while the dialect is written with the prefix Ki- (see p. 26).

VOCABULARIES

<i>English.</i>	<i>Suahili.</i>	<i>Zigula.</i>	<i>German.</i>
able, be	weza	daha	können
I can	naweza	nadaha	ich kann
about (approx- imately)	kama	haguhi	ungefähr
above	juu	kulanga	über
abroad (every- where)	kotekote	hale	überall
abuse (v.)	tukana	tukana	schimpfen
accidentally	simakusudi, kwa bahati	bahati	zufällig
accompany	enda na	hita hamwenga	begleiten
I accompany	naenda na	nahita ha- mwenga	Ich begleite
admiral	admeli		Admiral
Admiralty	serkali ya manowari zote		Admiralität
adrift, be	potea	aza	treibend
aeroplane	(mtambo wa kuruka juu, gari la kwenda hewani)	merikebu ya he- wani	Flugmaschine
afloat, be	elea majini	aza	flott
aft	nyuma	kunyuma	hinten (am Schiffe)
afternoon	alasiri	kisingi	Nachmittag
afterwards	baadaye	kunyuma	nachher
ahead	mbele	kulongola	voraus
alive	-zima, hayi	-a moyo, emeso	lebendig
all	-ote, pia	-ose	alles
allowed, to be	ruhusiwa, achiwa	inka luhusa	dürfen
I may (am al- lowed)	nina ruhusa	nina luhusa	ich darf
ally	rafiki	mbuya	Verbündete
almost	karibu	haguhi na	beinahe
alone	pasipo mtu, pekee	ikedu	allein
alongside of, be,	pambana na	hamwenga	längsseit

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
already	zamani	haluseluse	schon
although	ikiwa	hati, hegu	obschon, obwohl
altogether	kabisa	woseni	zusammen
always	siku zote	siku zose	immer
ammunition	baruti na lisasi (powder and shot), viasi (car- tridges)	mabwewe	Kriegsvorrat, Munition
ammunition- waggon	gari (any wheeled ve- hicle, <i>plur.</i> magari)	gari ya mabwewe	Munitionswagen
anchor	nanga		Anker
and	na	na	und
anger	hasira	maya	Zorn
angry	kasirika	kuwa na maya	böse
ankle	kifundo cha mguu	nkungu	Knöchel
answer	jibu (<i>plur.</i> majibu)	landula	Antwort
anvil	fuawe	fulawe	Amboss
anywhere	po pote	hosehose	irgendwo
appoint	agiza	lagiza	ernennen
approach	kuja, karibia	bwila	sich nähern
April		sika	April
Arab (an)	Mwarabu (<i>plur.</i> Waa- rabu)	Marab	Araber
Arabia	Arabuni		Arabien
arm	mkono (<i>plut.</i> mikono)	mkono	Arm
armed	-enyi selaha	kuwa na mata	bewaffnet
armour	selaha	mata	Panzer
arms	selaha	mata	Waffen
army	jeshi la asikari	moza	Armee
arrange	andika, panga, tenge- neza	tengeneza	ordnen
arrest (v.)	kamata, funga	toza	verhaften
arrive (v.)	fika, wasili	bula	ankommen
artillery	mizinga		Artillerie
ashes	majifu	maivu	Asche
ashore	pwani	mpwani	am Lande
ask (question)	uliza	uza	Frage
ask for	taka, omba	unga	fragen
I ask	na-uliza	nauza	ich frage
thou askest	wa-uliza	wauza	du fragst
he asks	a-uliza	auza	er fragt
we ask	twa-uliza	chauza	wir fragen

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
you ask	mwa-uliza	mwauza	ihr fragt
they ask	wa-uliza	wauza	sie fragen
I shall ask	nita-uliza	naniuze	ich werde fragen
I asked	nali-uliza	nakiuza	ich fragte
ass	punda	mpunda, njowe	Esel
astern	nyuma (behind), she-trini		achteraus, hinteraus
at	kwa, kwenyi	ho, he	bei
at least		kindedi	mindestens
at most		jumla	höchstens
at once	sasa hivi, marra moja	huluseluse	sofort
attack (<i>sb.</i>)	shambulio (<i>plur.</i> ma-shambulio)	kutowa kwa	Angriff
attack (<i>v.</i>)	shambulia	towa	angreifen
axe	shoka (<i>plur.</i> mashoka)	hoya	Axt
bad	-baya	vihye	schlecht
baggage	vyombo	kiya	Gepäck
bake	oka	oka	backen
bale (<i>v.</i>)	vuta	mtumba	ausschöpfen
ballast	farumi		Ballast
bandage	kitambaa (<i>plur.</i> vitambaa)	kitambala	Verband
bank (of river)	ukingo	lufukwe	Ufer
barley	shairi		Gerste
barracks	nyumba ya asikari	nyumba za asikari	Kaserne
barrel (of a gun)	kasiba	mwazi	Lauf
barricade	boma (<i>plur.</i> maboma)	gwegwe	Verschanzung
basket	kikapo (<i>plur.</i> vikapo)	gahu, ntangulu	Korb
bathe (<i>v.</i>)	oga	haka mazi	baden
battalion	kikosi cha asikari (<i>plur.</i> vikosi vya-)		Bataillon
battery	jamii ya mizinga		Batterie
battle	vita	nkondo	Schlacht
battleship	manowari	merikebu ya nkondo	Kriegsschiff
bay (<i>sb.</i>)	ghubba		Bai
bayonet	upanga wa bunduki (<i>plur.</i> panga za-)		Bajonett
beach	pwani	mpwani	Strand
beacon (-fire)	moto wa kuonya (<i>plur.</i> mioto ya-)	moto wa kuonyesa	Bake

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
beans	(various kinds, kunde, choroko, fiwe, &c.)	nkunde	Bohnen
beard	ndevu	ndevu	Bart
beat (v.)	piga, gonga	towa	schlagen
beautiful	-zuri	-tano	schön
because	kwa sababu	kwa sibabu	weil
bed	kitanda (<i>plur.</i> vitanda)	lusazi	Bett
bedroom	chumba cha (<i>plur.</i> vyumba vya) kulala	nyumba ya kugona	Schlafzimmer
beef	nyama ya ng'ombe	nyama ya ng'ombe	Rindfleisch
beer	pombe	mpombe	Bier
before (time)	mbele	kale	vorher
before (place)	mbele	kulongola	vor
begin	anza	konga, voka	anfangen
behind	nyuma	kunyuma	hinter
believe	amini	tunilwa	glauben
below	chini	hasi ha	unten
bend (v.)	pinda	hinda	biegen
berth	kijumba (<i>plur.</i> vijumba)	ndima	Schiffsbett
besiege (v.)	husuru	towa	belagern
betray	danganya	vumbula	verraten
better, best	bora, afathali	ntana, ntana mno	besser, am besten
between	katikati	gati ya	zwischen
beyond	kupita, mbele	kenya	jenseits
big	kubwa	-kulu	gross
bigger, biggest	kubwa zaidi, kubwa mno	nkulukulu, nkulu mno	grösser, am grössten
bill (account)	cheti, hati		Rechnung
bird	ndege	mdege	Vogel
bit	lijamu		Gebiss
bit (piece)	kifungu, kipande (<i>plur.</i> vifungu, vipande)	kipande	Stück, Bisschen
bitter	chungu	-sungu	bitter
black	eusi	-titu	schwarz
blacksmith	mfua chuma, fundi	msani	Hufschmied
blame (v.)	karipia	kanya	tadeln
blanket	blanketi	blanketi	wollene Bettdecke
bleed	toka damu	lanya sakami	bluten

<i>English.</i>	<i>Swahili</i>	<i>Zigula.</i>	<i>German.</i>
blind	pofu	nkahene meso	blind
blockade	husuru		Blockade
blood	damu	sakami	Blut
blow (<i>sb.</i>)	shindo (<i>plur.</i> mashindo), pigo (<i>plur.</i> mapigo)	toigo	Schlag
blow (<i>v.</i>)	vuma (of wind)	vuma	blasen
blue	samawi	nili	blau
blunt	butu	ngola nkahene nkali	stumpf
boat	mashua		Boot
body	mwili (<i>plur.</i> miili)	mwili	Körper
boil (<i>sb.</i>)	jipu (<i>plur.</i> majipu)	ihu maihu	Beule
boil (<i>trans.</i>)	tokosa, chemsha	ambika	kochen
boiled rice	wali	wali	gekochter Reis
boiler	chombo cha kupikia maji (vessel for boiling water)		Kessel
bone	mfupa (<i>plur.</i> mifupa)	vuha	Knochen
book	kitabu (<i>plur.</i> vitabu)	kitabu	Buch
boot	kiatu (<i>plur.</i> viatu)	latu	Schuh
boot-lace	ukanda la kiatu	uzi wa latu	Stiefelschnur
borrow	kopa, azima (also, lend)	kopa	borgen
bottle	chupa	supa	Flasche
bottom	chini	hasi	Grund
bow	gubeti (of ships), uta (weapon)		Bug
bowels	matumbo	maifu	Eingeweide
box	kasha (<i>plur.</i> makasha), sanduku	sanduku	Kiste
boy	kijana (<i>plur.</i> vijana)	mbwanga	Knabe
brackish	chumvi kidogo	-a munyu	salzig
brave	shujaa	-kali	tapfer
bread	mkate (loaf, <i>plur.</i> mikate)	mgate	Brot
break	vunja	bonda	brechen
it is broken	ime vunjika		Es ist gebrochen
breakfast	chamsha kinwa, chakula cha subuhi	chesasulo cha mtondo	Frühstück
breech (of gun, stock)	tako (<i>plur.</i> matako)		Schwanzschraube
breeze	upepo	mpeho	Brise

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
brick	tofali (<i>plur.</i> matofali)	tofali	Ziegelstein, Backstein
bridge	daraja (<i>plur.</i> madaraja)	ulalo, (rope) nema	Brücke
bridle	hatamu	.	Zügel
brigade	kundi (troops) la asikari		Brigade
bright	-envi kung'aa, -eupe	ng'ala	hell
bring	leta	leta	bringen
broad	pana	-nyagalamu	breit
broken	see <i>Break</i>	bondwa	gebrochen
brother	ndugu (near relative)	ndugu	Bruder
brown	(rangi kama kahawa)		braun
brush	burashi, ufagio (<i>plur.</i> mafagio)	hagilo	Bürste
bucket	ndoo	doo	Eimer
buffalo (male or female)	nyati	mbogo	Büffel
bug	kunguni	nkunguni	Wanze
bugle	tarumpeta	zumali	Horn, Signalhorn
build	jenga	zenga	bauen
bull	fahali (<i>plur.</i> mafahali)	jeku	Stier
bullet	popoo (<i>plur.</i> mapopoo)	mbwewe	Kugel
bullock	ng'ombe maksai	ngulumale	Farre
buoy	chelezo (<i>plur.</i> vyelezo)		Boje
burn (<i>trans.</i>)	choma, washa (set fire to), teketeza (destroy by fire)	oka	brennen, verbrennen
burn (<i>intrans.</i>)	chomeka, waka	waka	brennen
bury	zika	zika	begraben
bush	kijiti (<i>plur.</i> vijiti), (jungle) msitu, makoko	kaziti	Gebüsch
busy	tendaji	kuwa na ndima	beschäftigt, fleissig
but	lakini	mna	aber
butter	siagi	mabongo	Butter
button	kifungo (<i>plur.</i> vifungo)	kifungo	Knopf
buy	nunua	gula	kaufen
by (near)	karibu na	haguhi	bei, nahe bei
cabin	kijumba (<i>plur.</i> vijumba)		Kajüte
cable (chain)	minyoro (<i>plur.</i> minyoro)	simu	Kabel

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
cake	mkate mtamu	mgate ya mwile	Kuchen
calf	ndama ya ng'ombe	ndama	Kalb
call (visit)	amkia	itanga	besuchen
call (cry out)	lia, (summon, name) ita	guta	rufen
calm	tulivu	nyamala	still, windstill
a calm	shwari	-a nyamala	eine Windstille
camel	ngamia	ngamea	Kameel
camp (<i>sb</i>)	kituo (<i>plur.</i> vituo), kambi (makambi)	tulwe	Lager
camp (<i>v.</i>), en- camp	tua, panga	tula	sich lagern
can	weza		können
I can	naweza	nadaha	ich kann
thou canst	waweza	wadaha	du kannst
he can	aweza	adaha	er kann
we can	twaweza	chadaha	wir können
you can	mwaweza	mwadaha	ihr könnt
they can	waweza	wadaha	sie können
I cannot	siwezi	nkikudaha	ich kann nicht
can you ?	je mwaweza ?	mwadaha ?	können Sie ?
canst thou ?	je waweza ?	wadaha ?	kannst du ?
canal (large irri- gation)	mto (river, <i>plur.</i> mito)	mtoto	grosser Kanal
canal (small irri- gation)	mfereji (trench, <i>plur.</i> mifereji)		kleiner Kanal
candle	meshmaa	mtata	Licht, Kerze
canoe	mtumbwi (<i>plur.</i> mi- tumbwi)	mtumbwi	Nachen
canter	enda mg'had	kwela	in leichtem Gallop reiten
canvas	nguo nzito, nguo nene (i.e. stout cloth)		Segeltuch
cap	kofia	nkofiya	Mütze
cape	ras		Kap
capstan	duara		Gangspill
captain (of ship)	nakhotha	mkulu wa meri- kebu	Kapitän
captain (military)	akida	mkulu wa asikari	Hauptmann
captive	teka (<i>plur.</i> mateka)	nkale	der Gefangene
capture (men)	kamata, teka	sinda	gefangennehmen
capture (place)	teka	sinda	Einnahmeung, Eroberung

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
caravan	msafara (<i>plur.</i> misa-fara)	ntambo	Karawane
careful	-angalifu	polepole	vorsichtig
cargo	shehena, mizigo	mizigo	Schiffsladung, Fracht
carpenter	seramala	msongozi	Zimmermann
carpet	zulia		Teppich
carry	(e.g. a load) chukua, (convey) peleka	inula	tragen
cart	gari (<i>plur.</i> magari)	gari	Karren, Fuhrwerk
cartridge	kiasi cha bunduki (<i>plur.</i> viasi vya —)	kiasi	Patrone
cart-track	njia	sila	Wagenstrasse
castle	ngome		Schloss
cat	paka	mnyau	Katze
catch (<i>v.</i>)	kamata	gwila	fangen
cattle	(kine) ng'ombe	ng'ombe	Vieh
cavalry	asikari wa kupanda frasi	asikari ya frasi	Kavallerie, Reiterei
cave	pango (<i>plur.</i> mapango)	bomoka	Höhle
cellar	chumba kilicho bika chini	chimba	Keller
cement	chokaa gumu, udongo wa Ulaya	ulongo wa Ulaya	Zement
centre	kati	gatigati	Zentrum, Mittelpunkt
certainly	inshallah, naam	kindendedi	gewiss
chain	mnyororo (<i>plur.</i> min-yororo)	lunyolo	Kette
chair	kiti (<i>plur.</i> viti)	kiti	Stuhl
channel	njia	msitimbi	Kanal, Wasserstrasse
chart	ramani		Seekarte
cheap	rahisi	-hufu	billig
cheerful	-kunjufu	usesi	munter
cheese	jibini		Käse
chicken	kifaranga (<i>plur.</i> vifaranga)	kiziyeziye	Hühnchen
chief	jumbe (<i>plur.</i> majumbe)	mzumbe	Häuptling, Oberhaupt
children	mtoto (<i>plur.</i> watoto)	wana	Kinder
chin	kidevu (<i>plur.</i> videvu)	kilevu	Kinn

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
chisel	patasi		Meissel
choose	chagua	sagula	wählen
Christmas	(siku kuu ya kuzaliwa Kristo)	siku kulu ya uzazi wa Kristo	Weihnachten
church	kanisa	kanisa	Kirche
circle	duara	mbugulushu	Kreis, Ring
circle (<i>v.</i>)	zunguka	zunguluka	umgeben, kreisen
clan	kabila (<i>plur.</i> makabila)	mbali	Stamm
clean (<i>adj.</i>)	safi, -eupe	-a ehaka	rein
clean (<i>v.</i>)	safisha	ng'ala	reinigen
clear (<i>v.</i>)	(of weather) takata	-a kung'ala	aufklären
cliff	jabali (<i>plur.</i> majabali)	kunga	Klippe
clock	saa	saa	Uhr
close (<i>v.</i>)	funga, (door) shindika	vugala	schliessen
cloth	nguo, (calico) amerikano, (woollen) joho	suke	Tuch
clothes	nguo	suke	Kleider
cloud	wingu (<i>plur.</i> mawingu)	vugala	Wolke
coal	makaa	makala	Kohle
coast	ukingo wa bahari, pwani	mpwani	Küste
coffee	kahawa, (beans) buni za kahawa	kahawa	Kaffee
cold (<i>sb.</i>)	baridi	mpheho	Kälte
cold (<i>adj.</i>)	-a baridi	-a lota	kalt
collar	utepe wa shingoni		Kragen
collect (<i>v.</i>)	kusanya	vuza hamwe	sammeln
collision	magongano	wose hamwenga	Zusammenstoss
colonel	amiri wa asikari		Oberst
colour	rangi	rangi	Farbe
colours	(flag) bendera	bendela	Nationalflagge
colt	mwana frasi	mwana wa frasi	Füllen, Hengstfüllen
come	ja. Come! Njoo! (<i>plur.</i> njooni)	iza. Come! So!	kommen
comfortable, be	tengenea	-ahongezo	behaglich
command (<i>v.</i>)	amuru (give orders)	lavya mlomo	kommandieren, befehlen
commander	mkuu wa asikari (chief officer, military)	mlavya mlomo	Befehlshaber kommandant
commerce	biashara, kuuza na kununua	uchuluzi	Handel

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
commission	agizo (<i>plur.</i> maagizo)	lagizo	Kommission, Auftrag
communication	habari (news, intelligence)	usiliko	Mitteilung, Nachricht
companion	mwenzi (<i>plur.</i> wenzi)	mbuya	Begleiter
company	kikosi (military, <i>plur.</i> vikosi), kundi (<i>plur.</i> makundi), jamaa (of people generally)	lukolo lukolo lwa asikari	Kompagnie, Gesellschaft
compass	dira		Kompass
N.	kaskazini	kaskazini	N. (Nord)
N.E.	kati ya kaskazi na matlai	kaskazini mashariki	N.O. (Nord-Ost)
E.	mashariki	mashariki	O. (Osten)
S.E.	akrab matlai	kusini mashariki	S.O. (Süd-Ost)
S.	kusini	kusini	S. (Süd)
S.W.	akrab magaribi	kusini magharabini	S.W. (Süd-West)
W.	magaribi	magharabini	W. (Westen)
N.W.	kati ya kaskazi na magaribi	kaskazini magharabini	N.W. (Nord-West)
complain	nung'unika	kanya	sich beklagen
condition (state)	hali, tabia	waonazeze	Zustand
condition (stipulation)	sharti, ahadi.	sibabu	Bedingung
confess	kiri, ungama	semba	gestehen
content, be	rathi, rithika	rathi	zufrieden
contraband	haramu		Contreband
convenient	-a kufaa, -ema	vyedi	bequem
convoy (<i>v.</i>)	sindikiza	sindikiza	geleiten
cook (<i>sb.</i>)	mpishi	mtakwambira	Koch
cook (<i>v.</i>)	pika	ambika	kochen
cool	baridi	mpeho	kühl
copy (<i>v.</i>)	nakili		abschreiben
cord	kamba	kigwi	Strick
cork	kizibo	sito	Kork, Stöpfel
corn	nafaka	mpuluzi	Korn
corporal	(asikari msimamizi)		Korporal
cotton	pamba	upamba	Baumwolle
country	inchi	si	Land

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
courageous	shujaa	-a kali	tapfer
cover (v.)	funika	gubika	decken
cover, take	jificha	igoja	Obdach nehmen
cow	ng'ombe jike	ng'ombe	Kuh
cowardly	oga	woga	feige
creek	gubba ndogo		Bucht
crew	ubaharia		Schiffsmann- schaft
crooked, be	potoka	hotoka	krumm
crop (v.)		bonda	abschneiden
crops	mavuno	ulozo	Ernte
crowd	kundi (<i>plur.</i> makundi)	dongo	Menge
cruel	-kali	-kali	grausam
cruise (v.)	vinjari		kreuzen
cruiser	manowari ya vinjari		Kreuzer
cultivation	mlimo	kulima	Feldbau
cup	kikombe (<i>plur.</i> vikom- be)	kikombe	Tasse
current	mkondo wa maji (<i>plur.</i> mikondo ya —)		Strom
custom-house	fortha		Zollamt
daily	killia siku	siku zose	täglich
dam	boma la kuzuia maji, kizingiti		Damm
damage	haribu	ubanasi	Schaden
damp	kimaji	-sisimu	feucht
danger	hatari	-a nkama	Gefahr
darkness	giza	-a kiza	Dunkelheit
daughter	binti	mwana kivyele	Tochter
day	siku (24 hours), mchana (day time)	siku, zuwa	Tag
dead	-liokufa, -fu	mfi	tot
deaf	kiziwi	ndilili	taub
dear	-penzi	-a kuunga	lieb
dear (price)	ghali	kidala	teuer
death	mauti, kifo	kimba	Tod
deceive	danganya, (cheat) punja	danta	täuschen
deck	sitaha		Deck
deep	-a kwenda chini	hatali	tief

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
deer	nyama (of game in mpala general)		Reh, Wild
defend (<i>v.</i>)	linda	goja	verteidigen
dense	-zito, -nene	-nene	dicht
describe	toa habari, eleza	gambila	beschreiben
desert (<i>sb.</i>)	jangwa, poli (<i>plur.</i> mapoli)	nyika	Wüste
desert (<i>v.</i>)	acha (abandon), toroka leka (run away)		desertieren
deserter	mtoro (<i>plur.</i> watoro)		Ausreisser, Fahnenflüchtige
despatch (<i>v.</i>)	(send) tuma	tuma	absenden
destroy	haribu	balanga	zerstören
diarrhoea	tumbo la kuenenda	huluka	Diarrhöe
die	fa, fariki	kufa	sterben
difficult	-gumu, -a mashaka	-dala	schwierig
dig	chimba	simba	graben
dinner	chakula (cha jioni)	nkande ya mwanagulo	Mittagsmahl
dirty	-a taka, -chafu	-wa na nongo	schmutzig
disappear	toweka	zimila	verschwinden
discover	vumbua	wona	entdecken
disease	marathi, ugonjwa	unyonge	Krankheit
dishonest	si amini, -janja	soni	unehrlich
disobedient	kaidi	utili	ungehorsam
district	inchi	hundo	Bezirk (administrative), Kreis
diver	mpiga mbizi		Taucher
divide (<i>v.</i>)	kata (in parts), tenga panga (separate), gawa (distribute)		teilen, verteilen
division		mpanda	Division
do	tenda, fanya	damanya	tun
dock	katiza (cut short)		Dock
dockyard	gudi (<i>plur.</i> magudi)		Schiffsbauhof
doctor	tabibu, mganga (<i>plur.</i> waganga)	mganga	Arzt
dog	mbwa	kuli	Hund
donkey	punda	mpunda	Esel
door	mlango (<i>plur.</i> milango)	mlango	Türe
doubt	shaka (<i>plur.</i> mashaka)	-wa na shaka	Zweifel

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
draw (map, &c.)	andika, (water) teka (maji), (map) vuta, kokota	panga mhaka	zeichnen
dress oneself	nguo vaa nguo	vika	sich anziehen
dress (a wound)	tia dawa	funga nkwenge	verbinden
drift	chukuliwa		triftig sein
drink (<i>sb.</i>)	kinywaji, cha kunywa	minywele	Getränk
drink (<i>v.</i>)	nywa	nywa	trinken
drive (<i>trans.</i>)	endeza	ingasa	treiben
drown	tosa majini	agwa mwe mazi	ertrinken
dry (<i>v.</i>)	kausha	nyaza	trocknen
dry (<i>adj.</i>)	-kavu	-nyala	trocken
duck	bata (<i>plur.</i> mabata)	wata	Ente
dust	vumbi (<i>plur.</i> mavumbi)	vumbi	Staub
dynamite	baruti (gunpowder)		Dynamit
dysentery	tumbo la kuhara damu	sango	Ruhr
ear	sikio (<i>plur.</i> masikio)	gutwi	Ohr
early	mapema	mtotondo	früh
earthen	-a udonoo	ulongo	irden
east	mashariki	mashariki	östlich
Easter	Pasaka	Pasaka	Ostern, Osterfest
eastern	-a mashariki	-a mashariki	östlich, morgen- ländisch
easy	rahisi	-hufu, lahisi	leicht
eat	la, (chew) tafuna	kudya	essen
egg	yayi (<i>plur.</i> mayayi)	tagi	Ei
Egypt	Misri	Misri	Aegypten
Egyptian	Mmisri (<i>plur.</i> wamisri)	mutu wa Misri	Aegypter (<i>sb.</i>), ägyptisch (<i>adj.</i>)
embark	pakia		einschiffen
embarkation	mapakizi		Einschiffung
employ (thing)	tumia	tumiya	brauchen, anwen- den
employ (men)	tuma	inka ndima	anstellen
empty	pasimo kitu, -tupu	-bela	leer
encamp	fanya kituo, panga, tua, ibute	tula	lagern
encampment	kituo (<i>plur.</i> vituo), kambi	ntulwe	Lager
end (<i>sb.</i>)	mwisho	bindizizo	Ende
end (<i>trans.</i>)	komesha, (finish) maliza	binda	beendigen

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
endure	vumilia	gigimiza	aushalten
engine	mtambo (<i>plur.</i> mitambo)	gari ya mosi	Maschine, Lokomotiv (railway)
England	Ingereza, ulaya ingereza	Ulaya	England
Englishman	Mwingereza (<i>plur.</i> waingereza)	Mgereza	Engländer
enough, be	tosha	tosha	genug
ensign	bendera	bendela	Schiffsflagge, Fähnrich (officer)
envelope	bahasha, (<i>v.</i>) zunguka	envelope	Briefumschlag (<i>sb.</i>) einwickeln (<i>v.</i>)
equip	fanya tayari, sarifisha	inka	ausrüsten
err	kosa	balanga	sich irren
escape	okoka	nyilika	entwischen
escort (<i>sb.</i>)	mlinzi (<i>plur.</i> walinzi)	sindikizo	Geleit
escort (<i>v.</i>)	sindikiza	sindikiza	geleiten
evacuate	ondoka katika, achia	lawa	räumen
evening	jioni	mwanagulo	Abend
ever	wakati wo wote, siku zote	siku zose	immer
every	killia	-ose	jeder, jede, jedes
everything	killia kitu	killia kintu	alles
everywhere	potepote, killia mahali	kosekose	überall
ewe	kondoo jike	mbuguma	Mutterschaf
examine	angalia, tazamia	iva, lamula	untersuchen
except	illa	-kasa	mit Ausnahme
excuse (<i>v.</i>)	achilia	londa sibabu	von entschuldigen
exercise (<i>sb.</i>)	mafundisho (training) mazoeo (practise)	zwela	Übung
explain	eleza	gambila	erklären
explode (<i>trans.</i>)	washa (set fire to), tegua	ila	explodieren lassen
explode (<i>intrans.</i>)	waka	ila	explodieren
explosion	shindo kubwa	kwila	Explosion
eye	jicho (<i>plur.</i> macho)	ziso (<i>pl.</i> meso)	Auge
face	uso (<i>plur.</i> nyuso)	uso	Gesicht
faithful	amini, -nyofu	-a kutunilwa	treu
fall (<i>v.</i>)	anguka	gwa	fallen
family	jamaa, ndugu, (household) nyumba	lukolo	Familie
famous	-a sifa	-a manywa	berühmt
fanatical		shenzi	fanatisch

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
far	mbali	hale	weit
farm	shamba (<i>plur.</i> ma-shamba)		Pachthof, Meierei
farrier		msani	Hufschmied
fat	mafuta (<i>n.</i>), -nono (<i>adj.</i>), (of persons) nene	mavuta (oil) -a kudamana (<i>adj.</i>)	fett, dick
father	baba	tate	Vater
fear	hofu, woga	ogoha	Angst
ferry	kivuko		Fähre
fetch	leta	leta	holen
fever	homa	homa	Fieber
field	konde (<i>plur.</i> makonde)	mgunda	Feld
fight	vita, mapigano	towano	Gefecht, Kampf (<i>sb.</i>), fechten, kämpfen (<i>v.</i>)
fill	jaza	memeleza	füllen
filly	mwana frasi, jike	mwana frasi	Stutenfüllen
find	ona	wona	finden
finger	kidole cha mkono (<i>plur.</i> vidole vya-)	dole	Finden
fire	moto (<i>plur.</i> mioto)	moto	Feuer
fire-place	jiko (<i>plur.</i> meko)	ziko	Kamin, Herd (hearth)
fire-wood	kuni	nkuni	Brennholz
firm	imara, yabis	imala, dala	fest
fish	samaki	samaki	Fisch
flag (<i>sb.</i>)	bendera	bendela	Flagge, Fahne
flag (<i>v.</i>)	choka, legea	legea	ermatten, mutlos werden
flat	-pana pana	bandaga	flach
flea	kiroboto (<i>plur.</i> viro-boto)	kiloboto	Floh (<i>plur.</i> Flöhe)
flee (<i>v.</i>)	kimbia	nyilika	fliehen
fleet	merikebu-nyingi, (naval) jamii ya manowari		Flotte
flesh	nyama	nyama	Fleisch
flock	kundi (<i>plur.</i> makundi)	fyō	Herde
floor	chini, (of concrete) sakafu	hasi	Boden
flour	unga	unga	Mehl
flower	ua (<i>plur.</i> maua)	luwa	Blume

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
fly (<i>sb.</i>)	inzi	sindaki	Fliege
fly (<i>v.</i>)	ruka, (run away) kim-bia	puluka	fliegen
fog	kungu	kungugu	Nebel
follow	fuata	tongela	nachkommen
food	chakula (<i>plur.</i> vyakula)	nkande	Essen, Nahrung
foot	mguu (<i>plur.</i> miguu)	kiga	Fuss
footpath	njia	sila	Fussweg, Fuss-pfad
for—	kwa, (<i>adv.</i>) kwani	kwa—	für
for me, for my sake, on my behalf	kwa ajili yangu	kwa miye	für mich
for thee, for thy sake, on thy behalf	kwa ajili yako	kwa weye	für dich
for him, for his sake, on his behalf	kwa ajili yake	kwa yeye	für ihn
for her, for her sake, on her behalf	kwa ajili yake	kwa yeye	für sie
for us, for our sake, on our behalf	kwa ajili yetu	kwa suwe	für uns
for you, for your sake, on your behalf	kwa ajili yenu	kwa nyuwe	für euch
for them, for their sake, on their behalf	kwa ajili yao	kwa awo	für sie
forbid	gombeza, kataza	lemeza, kanya	verbieten
ford	kivuko (<i>plur.</i> vivuko)	chomboko	Furt
forest	mwitu, poli (<i>plur.</i> ma-poli)	mbago	Wald
forget	pitiwa, sahai	jala	vergessen
forgive	samehe, achilia	lekela	vergeben
fork	kiuma (<i>plur.</i> viuma)	forki	Gabel
formerly	kwanza, zamani, kale	aho kale	ehemals, früher
fortify	zungushia (or, fanizia) boma (surround with rampart and ditch)	damanya ngome	befestigen

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
fortunate	heri, -a bahati	-a bahati	glücklich
fowl	kuku	nguku	Huhn, Vogel
fox	mbweha	kigwema	Fuchs
France	Fransa	Franse	Frankreich
free	huru, -ungwana	-hulu	frei
Frenchman	Mfaransa (<i>plur.</i> Wafar-ansa)	Mfranse	Franzose
fresh	-bichi	-hya	frisch
Friday	Ijumaa	Ijumaa	Freitag
friendly	-pole, -ema	-a umbuya	freundlich
frighten	ogofya	tisa	erschrecken, in Furcht setzen
from—	kwa- kutoka kwa	tangu, tokea	von
from me	kwangu, kutoka kwangu	tokea miye	von mir
from thee	kwako, kutoka kwako	tokea weye	von dir
from him	kwake, kutoka kwake	tokea yeye	von ihm
from her	kwake, kutoka kwake	tokea yeye	von ihr
from us	kwetu, kutoka kwetu	tokea suwe	von uns
from you	kwenu, kutoka kwenu	tokea nyuwe	von euch
from them	kwao, kutoka kwao	tokea awo	von ihnen
fruit	tunda (<i>plur.</i> matunda)	matunda	Frucht
fuel	kuni (firewood)	nkuni	Brennstoff
full	-enyi kujaa, (complete) kamilifu	-tifu	voll
gale	pepo	nkung'unto	stürmischer Wind
gallop	enda mbio-mbio	guluka	Gallop
gate	mlango (<i>plur.</i> milango)	mlango	Tor, Barriere (railway)
gear	vyombo		Geschirr
gelding	frasi mhasi		Wallach
general	mkubwa wa majeshi	mkulu wa askari	General
gentle	-pole	-hozu	sanft
German	Dachi (<i>plur.</i> Wadachi)	Mdachi	Deutscher (<i>sb.</i>), deutsch (<i>adj.</i>)
Germany	Udachi, Ulaya Dachi	Ulaya wa Wadachi	Deutschland
get	pata	pata	bekommen
get up (rise)	ondoka, simama	inuka	aufstehen
girl	kijana mwanamke (<i>plur.</i> vijana waa-nake)	mndeke	Mädchen

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
girth	kivimba, unene		Gurt, Umfang (width)
give	pa, toa	inka, lavya	geben
give in	legea, shindwa	sindwa	nachgeben
glad	-kunjufu	elelwa	froh
glad, be	furahi	elelwa	sich freuen
glass	kioo, bilauri (tumbler, wineglass)	mdumu	Glas
go—	enda	genda	gehen
go away	ondoka, toka, enda	hita	weggehen
go in	ingia	ingila	hineingehen
go out	toka	uka, fosa	hinausgehen
goat	mbuzi	mbuzi	Ziege
gold	thahabu	zahabu	Gold
good	ema	-edi	gut
goose	bata la bukini		Gans
governor's office		nyumba wa mkulu	Statthalter-Amt
grass	majani	mazani	Gras
grateful, be	shukuru	-a shukulu	dankbar
great	-kubwa, -kuu	-kulu	gross
green	rangi ya majani	langi ya mani	grün
greet	salimu, amkia	lamsa	grüssen
grey	kijifujifu		grau
guard (<i>sb.</i>)	mlinzi (<i>plur.</i> walinzi)	mlugojo	Wache
guard (<i>v.</i>)	linda	goja	bewachen
guide (<i>sb.</i>)	kiongozi (<i>plur.</i> vion- gozi), rubani	mlongozi	Führer
guide (<i>v.</i>)	onyesha njia, ongoza	longola	führen
guilty		-a balanga	schuldig
he is guilty	yu hatiyani, amekosa		er ist schuldig
gulf	hori		Meerbusen
gun	bunduki, (cannon) mzinga (<i>plur.</i> miz- inga)	futi, bunduki	Kanone, Geschütz
gun-boat	(manowari ndogo)	merikebu ya bun- duki	Kanonenboot
hail (<i>v.</i>)	(call to) ita	ita	anrufen
hair	unyele (<i>plur.</i> nyele)	fili	Haar
halt (<i>v.</i>)	simama, tua	goloka	halten
hammer (<i>sb.</i>)	nyundo	nyundo	Hammer
hammer (<i>v.</i>)	gonga	konta	hämmern

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
hand	mkono (<i>plur.</i> mikono)	mkono	Hand
hang up	tundika	gwazika	aufhängen
harbour	bandari		Hafen
hard	-gumu	-dala	hart
hate (<i>v.</i>)	chukia	ihiya	hassen
have (<i>v.</i>)—	wa na	kuwa na	haben
I have	ni-na	nina	ich habe
thou hast	u-na	una	du hast
he has	a-na	ana	er hat
she has	a-na	ana	sie hat
we have	tu-na	chana	wir haben
you have	m-na	mwana	ihr habt
they have	wa-na	wana	sie haben
I have not	si-na	kahana	ich habe nicht
have you ?	u-na ?	una ?	haben Sie ?
hay	majani makavu	mazani	Heu
he	yeye	yeye	er
head	kichwa (<i>plur.</i> vichwa)	mtwi	Kopf
headache	kitwa	mtamu wa mtwi	Kopfweh
headland	ras		Landspitze
healthy	afya, -zima	-a ugima	gesund
heap	fungu (<i>plur.</i> mafungu)	fungu	Haufen
heap up	kusanya, fanya chungu	umbika	aufhäufen
hear	sikia	iva	hören
heart	moyo (<i>plur.</i> mioyo)	moyo	Herz
heat	moto	kalambuza	Hitze
heavy	-zito	moto, (of sun, kivuguto)	schwer
helm	msukani		Steuergerät
help (<i>sb.</i>)		ambizo	Hilfe
help (<i>v.</i>)	sayidia	ambiza	helfen
herd	kundi (<i>plur.</i> makundi)	fyo	Herde
here	huku, hapa	hano	hier
hide (<i>trans.</i>)	ficha, setiri	fisa	verbergen
hide (<i>intrans.</i>)	jificha	kweifisa	sich verbergen
high	-a juu, -a kwenda juu, -tali	kulanga	hoch
high-road	njia kuu	sila nkulu	Heerstrasse
high-water	maji kujaa		Hochwasser
hill	kilima (<i>plur.</i> vilima)	mlima	Hügel
hillock	kisugulu (<i>plur.</i> visu- gulu)	kalima	kleiner Hügel

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
hilly	enyi vilima	-a milima	hügelig
him	yeye	yeye	ihm, ihn
hinder	zuia	figiza	hindern
his	-ake	yakwe	sein, seine, seines
hit	piga	towa	schlagen
hither	huku, hapa		hierher
hobbles	mapingu		Spannstrick
hold (v.)	shika	toza	halten
hold (contain)	weka	kuwa na	enthalten
hold (a position)		toza	Stand halten
hold out (endure)	vumilia	gigimiza	aushalten
hole	tundu, (in ground) shimo (<i>plur.</i> mashi- mo)	langa	Loch
honest	amini, -nyofu, -ema	-a tunilwa	ehrlich
hook	kulabu		Haken
hope (<i>sb.</i>)		msuhi	Hoffnung
hope (<i>v.</i>)	taraji, tumal	ika msuhi	hoffen
horse	frasi	frasi	Pferd
hospital	nyumba ya wagonjwa	nyumba ya dawa	Spital, Kranken- haus
hostile	-a adui	kuwa na nkwi	feindlich
hot	moto	-a moto	heiss
hour	saa	saa	Stunde
house	nyumba	nyumba	Haus
how much ?	kiasi gani ?	kima chakwe ?	wieviel ?
how many ?	-ngapi ?	ngahi ?	wie viele ?
hungry	-envi njaa	lumwa sula	hungrig
hurry (<i>sb.</i>)		nyagulizo	Eile
hurry (<i>v.</i>)	himiza, fuliza	nyaguliza	eilen
husband	mume (<i>plur.</i> waume)	mume	Mann, Ehemann
I	mimi	miye	ich
ice	barafu		Eis
if	kama	kona, savyo	wenn
ignorant	-jinga	-enye uhezi	unwissend
ill	-gonjwa	lumwa	krank
illness	ugonjwa	utamu, unyonge	Krankheit
impossible	-siowezekana	haikudahika	unmöglich
imprison	funga	kugela mwe boma	verhaften, ins Gefängnis set- zen
impudent	-juvi, -fithuli	mazwela mahiye	frech

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
in—	mwa, ndani ya	mwe	in
in me	mwangu, ndani yangu	mwe miye	in mir
in thee	mwako, ndani yako	mwe weye	in dir
in him	mwake, ndani yake	mwe yeye	in ihm
in her	mwake, ndani yake	mwe yeye	in ihr
in us	mwetu, ndani yetu	mwe suwe	in uns
in you	mwenu, ndani yenu	mwe nyuwe	in euch
in them	mwao, ndani yao	mwe wao	in ihnen
inconvenient	-siofaa		unbequem
increase (<i>trans.</i>)	ongeza, zidisha	vugeza	vergrössern
increase (<i>intrans.</i>)	ongezeka, zidi	vugezwa	sich vergrössern, zunehmen
India	Hindi	si ya Wahindi	Indien
Indian	Mhindi (<i>plur.</i> Wah- indi), -a Kihindi	-a Wahindi	Indier (<i>sb.</i>), indisch (<i>adj.</i>)
indigestion	tumbo	unyonge wa ifu	schlechte Ver- dauung
infectious	-a kuambukiza	-a kuinkilizwa	ansteckend
inform	arifu, ambia, julisha	manyiza	unterrichten
in front	mbele	he longole	voran
in front of	mbele ya	he longole	vor
in future	baadaye, tangi leo	vituhu	in der Zukunft
ink	wino	sizi	Tinte
inlet	kihori (<i>plur.</i> vihori), kicubba		Einlass, Bucht (creek)
innocent	hana hatiya (he is innocent)	nkahene ubanasi	unschuldig
inside	ndani	kundani	drinnen, inwen- dig
insult (<i>sb.</i>)	tushi, ufithuli, jeuri	tukano	Beleidigung
insult (<i>v.</i>)	tukana	tukana	beleidigen
intelligent	-enyi akili, -ereyu	kuwa na akili	gescheid
intend	kusudia, taka	kuunga	meinen
interpret	pasiri	fosela	auslegen, über- setzen
interpreter	mkalimani, mfasiri	mfosezi	Ausleger, Dol- metscher
into	katika, ndani ya	mwe	in
invent	zua, tunga		erfinden
invite	ita	ita	einladen
iron (<i>sb.</i>)	chuma	kilama	Eisen
iron (<i>adj.</i>)	-a chuma	kali	eisern

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
irrigate			bewässern
island	kisiwa (<i>plur.</i> visiwa)	kiluwa	Insel
is there ?	iko . . . ?	Hegu ?	gibt es ?
it	hiyo, ile	iyō	es
its	-ake	-akwe	sein, seine, sein
jackal	mbweha	uzi	Schakal
jam		jam	das Eingemachte
jetty	diko (landing-place), (<i>plur.</i> madiko)		Hafendamm
Jew	Myahudi (<i>plur.</i> Waya- hudi)	Myahudi	Jude
journey	safari, mmendo (<i>plur.</i> miendo)	ntambo	Reise
judge	kathi		Richter
jug	kopo	jugi	Krug
jump	ruka	pilika	springen, hüpfen
jungle	msitu	nyika	Dickicht, Busch- land
justice	haki	haki	Gerechtigkeit,
keel	mkuku		Kiel
keep	linda, tunza	ika	halten, behalten
kettle	kanderinya	kettle	Kessel
key	ufunguo (<i>plur.</i> funguo)	ufunguwo	Schlüssel
kick	piga teke	sampa wala	einen Fusstritt geben
kid	mwana mbuzi (<i>plur.</i> waana mbuzi)	kazana mbuzi	Zieglein
kill	fisha, ua, chinja	koma	töten
kind(<i>sb.</i>)	namna (sort)	namna, mtindo	Art
kind(<i>adj.</i>)	-ema, -pole	untu	gütig
king	mfalme (<i>plur.</i> wafalme)	zumbe mkulu	König
kingdom	ufalme	uzumbe	Königreich
kitchen	jikoni	he di ziko	Küche
knee	goti (<i>plur.</i> magoti)	vindi	Knie
knife	kisu (<i>plur.</i> visu)	ngola	Messer
knot	fundo (<i>plur.</i> mafundo)	fundo	Knoten
know	jua, fahamu	manyā	wissen
lack(<i>sb.</i>)	ukosefu	kuwa na ukiwa	Mangel
lake	ziwa la maji	ziwa	See
lamb	mwana kondoo	mwana ngoto	Lamm

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>	
lame	kiwete, -a kuche- chemea	a kilema	lahm	
lamp	taa	fanusi	Lampe	
lance	mkuki (<i>plur.</i> mikuki)		Lanze	
land	inchi	si	Land	
language	lugha	milongele	Sprache	
large	-kubwa	-kulu	gross	
last (<i>v.</i>)	endelea, dumu	-a kukomeleza	dauern, aus- reichen (<i>provi-</i> <i>sions</i>)	
late, be	chelewa	chelwa	spät sein, ver- spätet	
laugh	cheka	seka	lachen	
launch (<i>v.</i>)	shua		vom Stapel laufen lassen	
law	sheria	mlomo	Gesetz	
lay	weka	gela	legen	
lazy	-vivu	-chevu	faul	
lead (<i>sb.</i>)	lisasi (<i>metal</i>)	bwewe	Blei	
lead (<i>v.</i>)	ongoza	longola	leiten, anführen (<i>a party</i>)	
leak	vuja		Leck (<i>sb.</i>), lecken (<i>v.</i>)	
lean, be	konda	-a sisili	mager	
learn	jifunza	ehinya	lernen	
leather	ngozi	kanda	Leder	
leave	ruhusa, acha, (<i>v.</i>) saza	leka, asa	Erlaubnis, Urlaub (<i>sb.</i>), verlassen (<i>v.</i>)	
leech	mruba		Blutegel (<i>sb.</i>), Blutegel setzen (<i>v.</i>)	
left (<i>hand</i>)	kushoto	asigwa (<i>v.</i>), -a moso (<i>adj.</i>)	links (<i>adv.</i>)	
leg	mguu (<i>plur.</i> miguu)	kiga	Bein	
lend	kopesha, azima (<i>also</i> , borrow)	kopesha	leihen	
length	urefu	utali	Länge	
less	duni, kidogo	hunguka	kleiner, weniger	
letter	waraka, barua, hati	baluwa	Brief	
level (<i>adj.</i>)	sawa	sawa sawa	eben, flach	
lie (<i>v.</i>)	lala	kwetandika	liegen	

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
lie (untruth)	uwongo	longa lulimi	Lüge
lieutenant	(akida mdogo)		Leutnant
life	uzima, maisha	ugima	Leben
lift (v.)	inua	inula	(auf)heben
light (sb.)	nuru, weupe	lumuli	Licht
light (adj.)	-epesi	-a huha, huka zaidi (less heavy)	leicht
lighter	mashua (boat)		Ausladungsschiff
limit	mpaka (<i>plur.</i> mipaka)	mhaka	Grenze
limp (v.)	chechemea	kochila	hinken
line	mstari (<i>plur.</i> mistari)	luzigi	Linie
lip	mdomo (<i>plur.</i> midomo)	mlomo	Lippe
listen	sikia sikiliza	tegeleza	zuhören
little (adv.)	kidogo	-geke	wenig
little (adj.)	-dogo	-dodo	klein
live	wa na uzima, ishi	emeso	leben
live (i.e. dwell)	kaa	ikala	wohnen
lively	epesi	enye ugima	lebhaft
liver	ini (<i>plur.</i> maini)	maini	Leber
load (sb.)	mzigo (<i>plur.</i> mizigo)	mzigo	ladung
load (v.)	pakia	toza mzigo	laden, beladen
load (a gun)	shindilia	sonkeza	laden
load (a pack animal)	pakiza, chukuza	gela mzigo	beladen
lock (sb.)	kitasi, (padlock) kufuli	kufuli	Schloss
lock (v.)	funga	vugala	schliessen
locust	nzige	sige	Heuschrecke
log	gogo (<i>plur.</i> magogo)	goda	(Holz-)Klotz
log (of ship)	kitabu cha batli		Log (sb.), in das Logbuch ein- schreiben, log- gen (v.)
long	-refu	-tali	lang
look at	tazama, angalia	sinya	ansehen
look-out	mlinzi (<i>plur.</i> walinzi)	mdimi	Ausguck, Aus- gucksman
loot	mateka	nkole	Beute (sb.), plün- dern (v.)
lorry	gari	gari	Blockwagen, Lori, Rollwagen
lose	potewa na, poteza	aza	verlieren

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
loss	hasara	hasala	Verlust
louse	chawa	mada	Laus (<i>plur.</i> Läuse)
low	-a chini	hasi	niedrig, tief (<i>deep</i>)
low-water	maji ya kupwa		Niedrigwasser
maize	muhindi	mpemba	Mais
make	fanya	damanya	machen
man	mwanaume (male, <i>plur.</i> waanaume), mtu (person, <i>plur.</i> watu)	mntu	Mann
map	ramani	mapi	Karte
mare	frasi jike	frasi	Stute
mark	tia alama (put a mark on)	gela kitangilo	markieren, be- zeichnen
market	soko	soko.	Markt
marsh	ziwa (<i>plur.</i> maziwa)	kitivo	Morast, Sumpf
mast	mlingote (<i>plur.</i> milin- gote)		Mast
master	bwana (<i>plur.</i> mabwana)	zumbe	Meister, Herr, (of a ship) Schiffer
matches	viberiti	vilibiti	Streichhölzer
me	mimi	miye	mich, mir
mealies	mahindi	mapemba	Mehlkuchen
mean	-nyonge		gemein, niedrig
measure (<i>sb.</i>)	kipimo	kihimo	Mass
measure (<i>v.</i>)	pima	hima	messen
meat	nyama	nyama	Fleisch
medicine	dawa	mti, dawa	Medizin, Arznei
meet	kuta	kintana	treffen
melted butter		siagi	geschmelzte But- ter
mend (<i>v.</i>)	tengeneza	damanyiza	ausbessern
merchant	mfanyi biashara	mchuluzi	Kaufmann
metal	madini	sana	Metall
middle	kati	kugati	Mitte (<i>sb.</i>), mittel (<i>adj.</i>)
military	-a asikari, -a vita	-a askari	Militär (<i>sb.</i>), mili- tärisch (<i>adj.</i>)
milk	maziwa	mele	Milch
mill	kinu	tuli	Mühle
millet (large)	mtama	uhemba	grosse Hirse
millet (small)	maweke		kleine Hirse

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
mine (<i>pron.</i>)	-angu	-angu	mein
mine (<i>sb.</i>)	shimo (hole, <i>plur.</i> ma-shimo)		Mine
minute (<i>sb.</i>)	dakika	dakika	Minute
missing	It is missing (not here), haipo, hapana	hai uko	abwesend
mistake	kosa (<i>plur.</i> makosa)	zaganyo	Irrtum
mix	changanya	biganya	mischen
Monday	Juma a tatu	Juma a tatu	Montag
month	mwezi (<i>plur.</i> miezi)	mwezi	Monat
moon	mwezi (<i>plur.</i> miezi)	mwezi	Mond
more	zayidi, -ngine	zaidi	mehr
morning	assubui	mtondo	Morgen
mosquito	imbu	mbu	Moskito
mother	mama	mnala	Mutter
mountain	mlima (<i>plur.</i> milima)	mlima	Berg
mountain-range	milima	milima	Gebirge
mouth	kinwa (<i>plur.</i> vinwa), kanwa	mlomo	Mund
mouth (of river)	mlango (<i>plur.</i> milango)	mlomo wa mto	Mündung
move (<i>trans.</i>)	endesha, jongeza	sogela	bewegen
move (<i>intrans.</i>)	enda, jongea	sogeza	sich in Bewegung setzen
much (<i>adj.</i>)	-ingi, tele	zaidi	viel
much (<i>adv.</i>)	sana	mno	sehr, viel
mud	tope (<i>plur.</i> matope)	ntagata	Schlamm
muddy	-a matope	-a ntagata	schlammig, schmutzig
mule	nyumbu	nyumbu	Maulesel, Maultier
muleteer	mchungu (wa nyumbu)	mntu wa nyumbu	Mauleseltreiber
must	sharti	sharti	muss, müssen
mutiny	maasi	fitina	Meuterei
mutton	nyama ya kondoo	nyama ya ngoto	Hammelfleisch
my	-angu	-angu	mein
nail (iron)	msomari (<i>plur.</i> miso-mari)	msomali	Nagel
nail (finger)	ukucha (<i>plur.</i> kucha)	nkombe	Fingernagel
narrow	-embamba	-sisili	eng
naval	-a manowari		naval- or schiffs-
navigate	ongoza merikebu		befahren, steuern

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
navy	manowari		Marine, Flotte (ships)
near (<i>adj.</i>)	karibu	haguhi	nahe
near (<i>adv.</i>)	karibu	haguhi	beinahe
necessary (it is)	lazima, sharti	shuti	es ist notwendig
neck	shingo (<i>plur.</i> mashingo)	singo	Hals, Nacken
need	uhitaji (<i>plur.</i> mahitaji)	sakazi	Not
needle	sindano	singano	Nadel
neither . . . nor	wala . . . wala	wala . . . wala	weder . . . noch
net	wavu (<i>plur.</i> nyavu), mshipi (<i>plur.</i> mishipi)	lwavu	Netz
never	si . . . sikuzote	nkio kabisa	nie, niemals
new	-pya	-hya	neu
newspaper	gazeti	msimulizi	Zeitung
nice	-a kupendeza, -ema, -tamu	-tana	hübsch
night	usiku	kilo	Nacht
no	sio, la, hakuna	bule	nein
noon	aththuuri, jua kichwa- ni	zuwa mwe mtwi	Mittag
no one	si hatta mtu, hapana mtu	nkahana mtu	keiner, niemand
north	kaskazini	kaskazini	Norden
northern	-a kaskazini	-a kaskazini	nördlich
nose	pua	mpula	Nase
not	si	nkio	nicht
not at all	si hatta kidogo	nkio kabisa	gar nicht
nothing	si kitu	nkahana kintu	nichts
not yet	bado	bado	noch nicht
now	sasa	haluse	jetzt
nowhere	si . . . mahali po pote	nkahana hantu	nirgends
number	hesabu	wazo	Zahl
oar	kasia (<i>plur.</i> makasia)		Riemen, Ruder
obedient	-tii, -sikizi	uhozu	gehorsam
obstinate	kaidi, -shupafu	-tili	eigensinnig
officer	ofsa, bwana		Offizier
often	marra kwa marra, mar- ra nyingi	mala kwa mala	oft
oil	mafuta	mavuta	Oel
old	-zee	dala	alt
old (ancient)	-a kikale	kale	alt, veraltet
old (worn), be	chakaa	dala	abgenutzt

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
old man	mzee (<i>plur.</i> wazee)	mgosi mkulu	alter Mann
old woman	kizee (<i>plur.</i> vizee)	mvyee mkulu	alte Frau
omelet	kimanda		Omlet, Eierku chen
on	juu ya (upon), mbele kulanga (forward)		auf, an, weiter
once, twice, &c.	marra moja, marra mbili	hamwenga, hakaidi, hakatatu	einmal, zweimal, &c.
only	tu	du	nur
open (<i>adj.</i>)	wazi	wazi	offen
open (<i>v.</i>)	fungua	vugula	öffnen
or	ao	wala	oder
order (<i>sb.</i>)	amri	mlomo	Befehl
order (<i>v.</i>)	amuru	sigila	befehlen
other	-ngine	-tuhu	ander
our	-etu	-etu	unser
ours	-etu	-a wetu	unser, unsere
outside	nje	kweise	aussen, draussen
oven	tanuu	ziko	Ofen
over	juu	kulanga	über
overboard	majini (in the water)		über Bord
owing to, be- cause of	kwa sababu ya	kwa sibabu	weil
ox	ng'ombe ndume	njeku	Ochs
pack-saddle (camel)	seruji	tandiko	(Kameel)pack- sattel
pack-saddle (mule)		tandiko	(Maultier)pack- sattel
pain	maumivu	lumizo	Schmerz
paper	karatasi	talatasi	Papier
pass	pita	omboka	Pass (<i>sb.</i>), pas- sieren (<i>v.</i>)
passage	njia	ginko	Ueberfahrt
path	njia	sila	Pfad, Weg
patrol (<i>sb.</i>)	mlinzi (<i>plur.</i> walinzi)		Patrouille, Streif- wache
patrol (<i>v.</i>)	shika kingojo		patrouillieren
pay (<i>v.</i>)	lipa	liha	bezahlen
peace	amani	amani	Friede
pen	kalamu	kalamu	Feder
Persia	Ajjemi		Persien

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
Persian	Mwajjemi (Waaajjemi), -a kiajjemi		Perser (<i>sb.</i>), per- sisch (<i>adj.</i>)
people	watu	wantu	Leute
pepper	pilipili manga	pilipili	Pfeffer
photograph	sanamu	sanamu	Photographie (<i>sb.</i>), photogra- phieren (<i>v.</i>)
pick-axe	sululu		Pickhacke
pier	msinji (of bridge, foun- dation, <i>plur.</i> misinji)		Hafendamm
pig	nguruwe	nguluwe	Schwein
pillow	mto (<i>plur.</i> mito)	mto	Kopfkissen
pilot	rubani		Lotse
pilotage	urubani		Lotsenkunde, Lotsengeld
pincers	koleo		(Kneip-, Beiss-) Zange
pistol	bastola	pistoli	Pistole
place	mahali	hantu	Platz
plain	inchi sawa na pana	pala	Ebene
plant	mbegu	kaziti	Pflanze
plate	sahani	sahani	Platte (metal), Teller (for din- ner, &c.)
play (<i>v.</i>)	cheza	seziga	spielen
pleasant	-a kupendeza, -tamu	-a mwile	angenehm
pleased, to be	pendezwa	tamilwa	froh sein
plough (<i>v.</i>)	lima	lima	pflügen
plunder	mateka	teka, taha	Beute (<i>sb.</i>), plün- dern (<i>v.</i>)
pony	frasi mdogo	frasi mdodo	Pony, kleines Pferd
pool	kiziwa (<i>plur.</i> visina)	ziwa	Pfuhl
poor	masikini, fukara	ukiwa	arm
pork	nyama ya nguruwe	nguluwe	Schweinefleisch
port	bandari		Hafen
port (of ship)	upande wa kushoto		Backbord
hard-a-port !			hart Backbord !
porthole	shubaka		Stückpforte
post-office	(postofis)	nyumba ya barua	Postamt
potato	kiazi (<i>plur.</i> viazi)	viazi	Kartoffel

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
pour out	mimina	etila	einschenken
powder	unga	unga	Pulver
praise (<i>v.</i>)	sifu	togola	loben
prefer	taka zayidi	sagula	vorziehen
prepare	fanya tayari	damanya	vorbereiten
pretty	-zuri	-tana	hübsch
price	kima, kiasi	samani	Preis
prison	kifungo, gereza	gereza	Gefängnis
prisoner	teka la vita (prisoner of war, <i>plur.</i> mateka ya vita), kaidi (cri- minal)	taha ya nkondo (prisoner of war)	der Gefangene, Verbrecher (cri- minal)
private	-a faragha, a siri	a siri	geheim
projectile			Geschoss
promise (<i>v.</i>)	ahidi (<i>v.</i>), ajadi (<i>sb.</i>)	ika kilaga	versprechen
province	jimbo (<i>plur.</i> majimbo)	mtaa	Provinz
pump	bomba		Pumpe
punish	athibu, rudi	kantula	bestrafen
pursue	fukuza (drive away)	ingasa	verfolgen
quarantine	(kwarantini)		Quarantäne
quarter	robo (one-fourth)	panga	Viertel
quay	diko (<i>plur.</i> madiko)		Kai
quick	-epesi	sunguza	schnell
quickly	upesi	upesi	schnell
quiet	-tulifu	-a kutondwala	ruhig
quilt	tandiko (la kitanda)		Bettdecke
raft	shapa (<i>plur.</i> mashapa)	msomo	Floss (<i>plur.</i> Flösse)
rails		chuma ya gari	Schienen, Geleise
railway		gari ya mosi	Eisenbahn
railway-station		nyumba ya gari	Bahnhof
rain	mvua	fula	Regen
ram	kondoo mume	ndolome	Ramme
rarely	shidda	nkio nyingi	selten
read	soma	soma	lesen
ready	tayari	visivu	fertig
rear	kinyume (behind)	kunyuma	Nachtrab
reckless	jahili	nkio taratibu	verwegen

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
red	-ekundu	kinkundu	rot
refuse	kataa	lemela	verweigern
regiment	kundi la asikari		Regiment
regret (<i>v.</i>)	juta	hela	bedauern
regulation	amri (order)	mlomo	Regulierung, Verordnung
reinforcements	msaada (help)	kuongeza askari	Verstärkungs- truppen
reins	hatamu	hatamu	Zügel
release (<i>v.</i>)	fungua	fungula	entlassen
remain	kaa	ikala	bleiben
remember	kumbuka	kumbuka	erinnern
repeat	fanya tena (do again), sema tena (say again)	tenda vituhu (do again), longa vituhu (say again)	wiederholen
report (<i>sb.</i>)		ulongo msindo	Bericht
report (<i>v.</i>)	toa habari, simulia	longa	berichten
resolute	thabiti, -gumu	imala	entschlossen
rest (<i>v.</i>)	pumzika	humula	ruhen
retreat (<i>sb.</i>)	kurudi nyuma	kunyuma	Rückzug
retreat (<i>v.</i>)	rudi nyuma	ita kunyuma	sich zurück- ziehen
return (<i>v.</i>)	rudi	uya	zurückkehren
revolver	bastola (pistol)		Revolver
rheumatism	uweli wa viungo		Rheumatismus
rib	ubavu (<i>plur.</i> mbavu)	lubavu	Rippe
rice	mpunga (plant), mchele (grain), wali (boiled)	mhunga, (cooked) wali	Reis
rich	tajiri	-goli	reich
ride (<i>v.</i>)	chukuliwa	kwela	reiten
riding-horse	frasi wa kupanda	frasi	Reitpferd
rifle	bunduki	bunduki	Gewehr
right	haki (just), -ema (good)	vyedi	richtig
right away!		mala moja	los! weiter! auf!
right (direction)	kuumeni, upande wa kuume	mkono wa ku- lume	rechts
ripe	-bivu	-a kwiva	reif
river	mto (<i>plur.</i> mito)	mto	Fluss
road	njia	sila	Strasse

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
road (camel)		sila	gangbarer Weg für Kameele
road (mule)		sila	Saumweg, Saum- pfad
road (metalled)		sila	makadamisierte Strasse
road (un- metalled)		sila	nicht makadami- sierte Strasse
rock	mwamba (miamba)	iwe nkulu	Felsen
rocky	-a mawe mengi	-a iwe	felsig
roof	paa	kisuhili	Dach
room	chuniba (<i>plur.</i> vyumba)	chumba	Zimmer
root	shina (<i>plur.</i> mashina)	sina	Wurzel
rope	kamba	luzigi	Seil, Tau
rotten	-ovu	-bovu	faul
rough	-gumu	-dala	rauh, holperig (of roads)
round	-a kiviringo	mbuluga	rund
row (<i>v.</i>)	piga makasia, vuta		rudern
ruddy	-ekundu		rötlich
ruins	maangamizi, mahame	mahuzu	Ruinen
run	enda mbio, kimbia	guluka	rennen
rush	nyasi (<i>plur.</i> manyasi)		Binse
sack	mfuko (<i>plur.</i> mifuko), gunia (of anything, <i>plur.</i> magunia)	guniya	Sack
sad	-a huzuni, -zito	lungumila	traurig
saddle (<i>sb.</i>)	seruji	matandiko	Sattel
saddle (<i>v.</i>)	tandika	tandika	satteln
saddle-bag			Satteltasche
safe	salama, -zima	salama	sicher
sailing-vessel	merikebu ya matanga		Segelschiff
sailor	baharia (<i>plur.</i> mabaharia)		Matrose
sails	tanga (<i>plur.</i> matanga)		Segel
salt	chumvi	munyu	Salz
salute	salamu, salimu (<i>v.</i>), amkia	ndamsa (<i>sb.</i>), lamsa (<i>v.</i>)	das Salutieren, salutieren
sally out	toka nje	tambula	einen Ausfall machen

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
same	moja, sawa	savyo	selb
it is the same	ndiyo ile ile	inga	es ist derselbe (dieselbe <i>or</i> dasselbe)
this is the same as that	hii ni sawa sawa na ile	sa vino	dieses ist das glei- che wie jenes
sand	mchanga	msanga	Sand
sandbank	fungu la mchanga (<i>plur.</i> mafungu)	msangalagaya	Sandbank
sandy	-a mchanga	-a msanga	sandig
Saturday	Juma ya mosi	Juma mosi	Samstag, Sonn- abend
saucepan	sufuria (<i>plur.</i> masu- furia)	sufulia	Schmorpfanne
save	okoa	okola, honya	retten
saw	msumeno (<i>plur.</i> misu- meno)	msimeno	Säge
say	sema	longa	sagen
I say	na-sema	nalonga	ich sage
thou sayest	wa-sema	walonga	du sagst
he says	a-sema	alonga	er sagt
we say	twa-sema	chalonga	wir sagen
you say	mwa-sema	mwalonga	ihr sagt
they say	wa-sema	walonga	sie sagen
I shall say	nita-sema	nanilonge	ich werde sagen
I said	nali-sema	kilonga	ich sagte
scarcely	shidda		kaum
scatter (<i>v.</i>)	tawanya	mwaganisa	ausstreuen
school	madrasa	shule	Schule
scissors	makasi	mkasi	Schere
scout	mpelelezi		Späher, Ausspä- her
sea	bahari	lukanga	See
season	wakati	kisingi, ukati	Jahreszeit
secret (<i>sb.</i>)	siri	njama	Geheimnis
secret (<i>adj.</i>)	-a siri	-a njama	geheim
secretary	katibu		Sekretär
secretly	kwa siri	kinyele	geheim
see (<i>v.</i>)	ona	wona	sehen
seek (<i>v.</i>)	tafuta	londa	suchen
seize	kamata	gwila	ergreifen

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
self	moyo	-enye	selbst
sell (<i>v.</i>)	uza	taga	verkaufen
send	peleka	tuma	senden, schicken
separate	tenga	panga	absondern
servant	mtumishi	mndima	Diener
serve	tumikia	tumikila	dienen
sew	shona	suma	nähen
shade	uvuli	kizuli	Schatten
shake	tikisa	singisa	schütteln
shallow	-chache (of water)	-geke	seicht, nicht tief
shave	nyoa	moga	rasieren
sheep	kondoo	ngoto	Schaf
sheet	shuka (la kitanda)		Leintuch
ship	merikebu, (native vessel) chombo (<i>plur.</i> vyombo)	merikebu	Schiff
shoe (<i>sb.</i>)	kiatu (<i>plur.</i> viatu)	latu	Schuh, Hufeisen (of horses)
shoot	piga bunduki	towa futi	schiessen
shop	duka (<i>plur.</i> maduka)	duka	Laden
shore	ukingo wa bahari, pwani	mpwani	Ufer
short	-fupi	-gihi, -guhi	kurz
shot	malisaa	malisawo	Schuss, Geschoss
shoulder	bega (<i>plur.</i> mabega)	wega	Schulter
shout	piga kelele, lia	guta	schreien
show (<i>v.</i>)	onyesha	onyesa	zeigen
shut (<i>see</i> close)	funga, shindika (of door)	vugala	schliessen
sick	-gonjwa	-a utamu	krank
side	upande (<i>plur.</i> pande), (of body) mbavu	upande	Seite
side with (<i>v.</i>)	fuata	tongela	Partei nehmen für
sight	kuona (seeing)	shabaha (aim), kuwona (seeing)	Gesicht, (Richt-) Korn (on a gun)
signal	alama	kitangilo	Signal
silent, to be	nyamaa	nyamala	schweigen
silver (<i>sb.</i>)	fetha	feza	Silber
silver (<i>v.</i>)	tia fetha nje		versilbern
since	tangu (from a given time)	tangu	seit

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
sink (<i>trans.</i>)	zamisha, tosa	didimila	senken, versenken
sink (<i>intrans.</i>)	zama, tota	totomela	sinken
sister	umbu (<i>plur.</i> maumbu)	lumbu	Schwester
sit	kaa kitako	ikala	sitzen
skilful	-enyi akili, -elekevu	ulanga	geschickt
slaughter (<i>v.</i>)	chinja	koma	schlachten
sleep (<i>sb.</i>)	usingizi	ntongo	Schlaf
sleep (<i>v.</i>)	sinzia	gona	schlafen
sleeve	mkono wa vazi (<i>plur.</i> mikono ya —)	mkono	Aermel
slow	-a kwenda polepole, -kokotevu	mpalahole	langsam
slowly	polepole, taratibu	mpalahole	langsam
small	-dogo	-dodo	klein
smaller	-dogo zaidi	dodo zaidi	kleiner
smell (<i>sb.</i>)	harufu	mzingo	Geruch
smell (<i>trans.</i>)	nusa	nusa	riechen (an)
smell (<i>intrans.</i>)	nukia (of sweet smell), nuka (of bad smells)	nunka	riechen (nach)
smoke (<i>sb.</i>)	moshi	mosi	Rauch
smoke (<i>v.</i>)	toka moshi, (tobacco) vuta tumbako	puta	rauchen
smooth	laini	-a deleka	glatt
snow	theluji	thuluji	Schnee
soap	sabuni	sabuni	Seife
soft	-ororo	-a kulegela	weich, sanft
soldier	asikari	askari	Soldat
solid	yabis, imara	imala	fest, dauerhaft
sometimes	pana siku, pangine	hamwenga	bisweilen
somewhere	pana mahali, pangine	hasiku	irgendwo
son	mwana (<i>plur.</i> waana)	mwana	Sohn
song	uimbo (<i>plur.</i> nyimbo)	wila	Gesang
soon	karibu	kisunguliza	bald
sound (<i>v.</i>)	lia (make a sound)	ila	schallen, blasen
sound (noise)	sauti, mlio	zwi	Geräusch
sounding	(take soundings) pima maji kwa bildi		Sondieren
soup	mchuzi	msuzi	Suppe
sour	-kali	maisi	sauer
sour milk		mele maisi	Sauermilch
south	kusini	kusini	Süden
southern	-a kusini	-a kusini	südlich

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
spade	(hoe, used as spade) jembe (<i>plur.</i> majembe)	gembe dya zungu	ki-Spaten
spark	cheche (<i>plur.</i> macheche)	sese	Funke
speak	nena	longa	sprechen
specially	zayidi	zaidi	besonders
speed	haraka, mbio	kunyaguliza	Geschwindigkeit, Fahrt
spirits	kileo (drink) (<i>plur.</i> vileo)		Spirituosen
spoon	mwiko (<i>plur.</i> miiko)	lwiko	Löffel
spring (v.)	ruka	puluka	springen, entspringen
spring (of water)	chemchemi	soko	Quelle
spur	kichokoo (<i>plur.</i> vichokoo)		Sporn
squall	tháruba	nkung'unto	Windstoss, Bö
square (<i>adj.</i>)	-a mrabba	mlaba	viereckig
stable	zizi (<i>plur.</i> mazizi), banda (<i>plur.</i> ma-banda)	nyumba ya frasi	Stall
staircase	madaraja	mhindo	Treppe
stalks (of millet or maize)	ubua (<i>plur.</i> mabua)	kongoti	Halm
stallion	frasi ndume mzima	frasi mume	Zuchthengst
stand	simama	goloka	stehen
star	nyota	ntondo	Stern
starboard	upande wa kuume		Steuerbord
hard-a-star-board !			hart Steuerbord !
state	hali, tabia	hali	Zustand
station	kingojo (of sentry)		Posten
steal	iba	bawa	stehlen
steam	mvuke		Dampf
steamer	mashua ya dohani	merikebu	Dampfschiff
steel (<i>sb.</i>)	pua	chuma	Stahl
steel (<i>adj.</i>)	-a pua	-a chuma	stählen
steering-gear	msukani		Steuergerät
stem	See stalk, (of ship) hanamu	See stalk	Vorsteven
stern	(severe) -kali, (of ship) shetri		Hintersteven

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
steward	msimamizi (<i>plur.</i> wa-simamizi)		Steward, Aufwärter
stick	kijiti (<i>plur.</i> vijiti), fimbo	nkome	Stock
still	-tulivu	-a kutondwala	still, ruhig
stock (of a gun)	mti (wa bunduki)	mwazi	Schaft
stoker	mchochezi moto		Heizer
stomach	tumbo (<i>plur.</i> matumbo)	maifu, tumbo	Magen
stone	jiwe (<i>plur.</i> mawe)	iwe	Stein
stony	-a mawe mengi	-a iwe	steinig
stop	simamisha (<i>trans.</i> si-mama, kaa)	nyamaza	(an)halten
stores	vifaa, masarufu	akiba	Vorräte
storm (v.)	pepo, tháruba, tufane	nkung'unto	stürmen
stormy	-a tufane	-a nkung'unto	stürmig
straight	sawa, -nyofu	-a nyoloka	gerade
strange	-geni, -a kigeni	-geni	fremd
strap	ukanda (<i>plur.</i> kanda)	mkowa	Riemen
straw	mbua kavu		Stroh
stream	mto mdogo (<i>plur.</i> mito midogo), kijito (<i>plur.</i> visito)	mto	Strom
street	njia (ya mji)	silā	Strasse
strength	nguvu.	nguvu	Kraft, Stärke
strike (v.)	piga	towa	schlagen
string	kigwe (<i>plur.</i> vigwe)	lugole	Schnur
strong	-a nguvu	-a nguvu	stark, kräftig
stupid	-pumbavu	uhezi	dumm
submarine	-a chini ya bahari		Unterseeboot (<i>sb.</i>), untersee- isch (<i>adj.</i>)
suddenly	gháfala	haluseluse	plötzlich
sugar	sukari	sukali	Zucker
sugar-cane	mua (<i>plur.</i> miua)	mguwa	Zuckerrohr
suitable	-a kufaa, -ema, wajibu	ya faa	passend
summer	wakati wa jua kali	kasikazi	Sommer
sun	jua	zuwa	Sonne
Sunday	Juma' a pili	Juma pili	Sonntag
sunrise	kucha	mtondotondo	Sonnenaufgang
sunset	kuchwa, magharibi	swa	Sonnenuntergang
supplies	masarufu	nkande (food)	(Kriegs)vorräte

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
surgeon	mganga (<i>plur.</i> wa-ganga)	mganga	Chirurg
surrender (<i>see</i> give in)	toa (i.e. act. give up)	kusindwa	übergeben
suspected		tetwa	verdächtig
sweet	-tamu	mwile	süss
swim	ogolea	ogela	schwimmen
sword	upanga (<i>plur.</i> panga)	lupanga	Schwert
Syria	Sham		Syrien
table	meza	banti	Tisch
take	twaa	sola	nehmen
talk	nena	longa	reden
tall	-refu, -tali	-tali	gross, hoch
tame	-zoefu	-a kufugwa	zahn
target	shebaha	kitalo	(Schiess-)Scheibe
taste	utamu	geza	Geschmack
tea	chai	chayi	Tee
teach	fundisha	hinya	lehren
tear	chozi (<i>plur.</i> machozi)	sozi	Träne
telegraph	simu (<i>sb.</i>), piga simu (<i>v.</i>)	simu	Telegraph
telegraph-office		nyumba ya simu	Telegraphenamt
telescope	darubini		Fernrohr
tell	nena, ambia	gambila	sagen
tent	hema	hema	Zelt
tent-peg	kijiti (cha hema, <i>plur.</i> vijiti vya —)		Zeltpflock
tent-rope	kamba (ya hema)	kamba ya hema	Zelttau
thank (<i>v.</i>)	shukuru	togola	danken
that (<i>conj.</i>)	kama	kugamba	dass
that (<i>pron.</i>)	-le (with proper prefix), mtu yule (that man)	yudya	jener, jene, jenes
thaw	kuyeyuka theluji		Tauwetter, Tau, auftauen (<i>v.</i>)
thee	wewe	weye	dich, (to —) dir
their	-ao	yao	ihr(e)
theirs	-ao	-a wao	der, die, das ihre
them	wao	wao	sie, (to —) ihnen
then (at that time)	siku ile	hati	damals
then (after that)	baadaye	kabinda	(als)dann, darauf
thence	toka huko	kulawa uko	daher

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
the other(s)	(see other)	mtuhu	der andere, die anderen
there	pale, kule, huko	kudya	dort
these (<i>adj.</i>)	hu-, ha-, hi- (with proper suffix)	ivi (things), wano (persons)	diese
these (<i>pron.</i>)	hu-, ha-, hi-	ivi (things), awa (persons)	diese
they	wao	awo	sie
thick	-nene	-nene	dick
thief	mwivi (<i>plur.</i> wevi)	mbavi	Dieb
thimble	subana		Fingerhut
thin	-embamba	-sisili	dünn
thine	-ako	-ako	der, die, das Deinige
thing	kitu (<i>plur.</i> vitu)	kintu	Ding
think	fikiri	waza	denken
thirst (<i>v.</i>)	ona kiu	wa na nkilu	dursten
thirsty	-enyi kiu	wa na nkilu	durstig
this	huyu (of a person). See these	uyu	dieser, diese, dieses
thither	huko, kule	uko	dahin, dorthin
those (<i>pron.</i>)	-le (with proper prefix)	wadya	jene, diejenigen
thou	wewe	weye	du
thread	uzi (<i>plur.</i> nyuzi)	uzi	Faden
threaten	kamia	tisa	drohen
throat	koo (<i>plur.</i> makoo)	mmelo	Gurgel
thunder	radi, ngurumo	ntuntumo	Donner
Thursday	Al-khamisi	Alhamisi	Donnerstag
tick	kupe	nguhe	Schaf-flaus
tide	maji kujaa na kupwa		Gezeit
tie	funga	funga	Band, Binde, binden (<i>v.</i>)
tight	a kukaza	toga	dicht, fest
till (<i>conj.</i>)	hatta, mpaka	hati	bis
time	wakati	ukati	Zeit
timid	-oga	-a woga	furchtsam
tired	-chovu	sokela	müde
to	kwa	kwa	zu
tobacco	tumbako	tumbatu	Tabak
to-day	leo	dyelo	heute
toe	kidole (cha mgutu, <i>plur.</i> vidole)	dole dya kiga	Zehe

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
to-morrow	kesho	luvi	morgen
tongue	ulimi (<i>plur.</i> ndimi)	lulimi	Zunge
to-night	usiku huu	mwanagulo	heute nacht
too	mno, kupita kiasi	naho	(all)zu, auch
tool	samani, chombo (vyombo)	chombo	Werkzeug
tooth	jino (<i>plur.</i> meno)	zino	Zahn
toothache	kuuma jino	gego	Zahnweh
top-boots	viatu virefu		Stulpenstiefel
touch (<i>v.</i>)	gusa	donta	anrühren
tough	-gumu	-dala	zäh(e)
towards	kwa	kwita kwa	gegen
towel	kitambaa (<i>plur.</i> vitam- baa)	kitambala	Handtuch
tower	mnara (<i>plur.</i> minara)		Turm
town	mji (<i>plur.</i> miji)	mzi, kaya	Stadt
track	njia	sila	Spur, Geleise
translate	fasiri	fyambula	übersetzen
translation	ufasiri	fyambwilo	Uebersetzung
treacherous	-janja	ulanga	verräterisch
tree	mti (<i>plur.</i> miti)	mti	Baum
tribe	kabila (<i>plur.</i> makabilo)	mbali	Stamm, Volks- stamm
trot	mashindo (<i>sb.</i>)	sisinta (<i>v.</i>)	Trab (<i>sb.</i>), traben (<i>v.</i>)
truce	mapatano ya kitambo	amani	Waffenstillstand
truck	gari dogo (<i>plur.</i> magari madogo)	gari	Wagen, Karren
true	kweli, hakika	kindedi	wahr
try	jaribu	geza	versuchen
Tuesday	Juma a nne	Juma a'nne	Dienstag
tug	kishindo		Schleppdampfer
Turk	Mturuki (<i>plur.</i> Watu- ruki)	Mturk	Türke (<i>sb.</i>), türkisch (<i>adj.</i>)
Turkey	inchi ya Maturuki	Turkey	Türkei
turn back	rudi (<i>act.</i> rudisha)	uya	rückkehren
turret	kinara (<i>plur.</i> vinara)		Türmchen, Turm (ship's turret)
unconscious, be	kuzimia roho	hingulwa	unbewusst sein
under	chini	hasi	unten
understand	fahamu, jua	manya	verstehen
under way		voka ntambo	in Fahrt

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
undress oneself	vua nguo	vula	sich ausziehen
unexpected	a gháfala	bahati	unerwartet
unjust	-sio haki, jeuri	nkio haki	ungerecht
unlucky	-a bahati mbaya		unglücklich
unpleasant, unsuitable	-baya	vihye	unangenehm
untrue	si kweli, uwongo	nkio kindedi	unwahr
us	sisi	suwe	uns
use (<i>v.</i>)	tumia	tumiya	brauchen, anwenden
useful	-a kufaa	-a kufaha	nützlich
useless	-siofaa	nkio -a kufaha	nutzlos
usually	desturi	karibu siku zose	gewöhnlich
valley	bonde (<i>plur.</i> mabonde)	bonde	Tal
valuable	-a thamani	-a samani	wertvoll
veal	nyama ya ndama wa ng'ombe	ng'ombe	Kalbfleisch
vegetables	mboga	maboga	Gemüse
vengeance	kisasi	nkulu	Rache
very	sana	kindedi, sana	sehr
victuals	vyakula	nkande	Proviant
village	kijiji (<i>plur.</i> vijiji)	mzi, kaya	Dorf
violent	-a jeuri	-a nguvu	heftig
visit (<i>sb.</i>)	maamkizi	ndamso	Besuch
visit (<i>v.</i>)	zuru, amkia	lamsa	besuchen
voice	sauti	zwi	Stimme
voyage	safari (ya baharini)	ntambo	Reise
wade (<i>v.</i>)	enda majini kwa miguu	hwaza	waten
waist	kiuno	kigudi	Taille
wait	ngoja, linda	goja	warten
wake	mkondo (of vessel)		Kielwasser
wake up	amka (<i>act.</i> amsha)	e meso	aufwecken
walk	enda	talamka	gehen
wall	ukuta (<i>plur.</i> kuta)	nkandula	Mauer
wall (<i>v.</i>)	jengea boma	zenga boma	mit Mauern versehen
war	vita, nkondo	nkondo	Krieg
warm	-a moto	-a moto	warm
warn	onya	kanya, gambila	warnen
wash oneself	oga	ehaka mazi	sich waschen

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
waste (<i>v.</i>)	poteza	mwaganisa	verwüsten
watch (<i>sb.</i>)	saa	saa	Uhr
watch (<i>v.</i>)	(stay awake) kesha, (keep an eye on) tazamia, angalia, (guard) tunza, linda	goja	wachen, Wache halten
watch (on ship)	lindo, ulinzi		Wache
water	maji	mazi	Wasser
water-bottle	chopa la maji	biga	Wasserflasche
water-carrier		mteka mazi	Wasserträger
waterskin			Wasserhaut
wave	wimbi (<i>plur.</i> mawimbi)		Welle, Woge
we	sisi	suwe	wir
weak	thaifu	mnyonge	schwach
wear (<i>v.</i>)	vaa	vala	tragen
weather	tabia (ya hewani)	hawa	Wetter
wedge	kabari (<i>plur.</i> makabari)	ndali	Keil
Wednesday	Juma' a tano	Juma a tano	Mittwoch
week	juma (<i>plur.</i> majuma)	juma	Woche
weigh	puma (uzito)	hima	wägen
weight	uthani, uzito	mizani	Gewicht
well (<i>sb.</i>)	kisima (<i>plur.</i> visima)	sima	Brunnen
well (<i>adj.</i>)	-zima (in health), <i>adv.</i> vema, njema	mgima	gesund
well (Persian wheel)			Brunnen (per- sisches Rad)
well-known	bayini	-a manyikana	wohlbekaant
west	magaribi	magharibi	Westen
western		-a magharibi	westlich
wet	chepechepe, majimaji	-a mazimazi	nass
what ?	-pi ? (with proper pre- fix)	mbwani ?	was ? wie ?
what sort of ?	gani ?	-ani	was für ein ?
what (<i>interj.</i>)	nini	mbwani	was
wheat	ngano	ngano	Weizen
wheel	gurudumu (<i>plur.</i> ma- gurudumu)	guludumo	Rad
when ?	lini ?	ini ?	wann ?
when	palipo	ini	wenn, als
whence ?	kutoka wapi ?	-ho	woher ?
whenever	killla palipo	killla ukati	wenn, so oft als
where ?	wapi ?	kuhi ?	wo ?

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
wherever	killa palipo	kose kose	wo auch
whether . . . or	kama . . . ama	wala . . . wala	ob . . . oder
which ?	-pi ? (with proper pre- fix)		welcher ? welche ? welches ?
whip	mjeledi (<i>plur.</i> mijeledi)	kambala	Peitsche
white	weupe	-a kung'ala	weiss
whither ?	kwenda wapi ?	kuhi ?	wohin ?
who (<i>rel. pron.</i>)	-ye	niani	wer, welcher
who ?	yupi ?	ani ?	wer ?
whole	pia, -zima, -ote	-gima	ganz
why	kwa nini	kwa sibabu yani	warum
wide	-pana	-angalamu	weit, breit
widow	mjane (<i>plur.</i> wajane)	mgumba	Witwe
wife	mke (<i>plur.</i> wake)	mvyele, mkaza	Frau, Gattin
wild	-a mwituni (of beasts)	-kali	wild
willing	tayari	visivu	bereit
win (<i>v.</i>)	pata (<i>get</i>), shinda (<i>con-</i> <i>quer</i>)	sinda	gewinnen
wind (<i>sb.</i>)	upepo	mpeho	Wind
wind (<i>v.</i>)	kunja	zinga	winden
window	dirisha (<i>plur.</i> madirisha)	dilisha	Fenster
windy	-a pepo nyingi	-a mpeho	windig
wine	mvinyo	mvinyo	Wein
wing	bawa (<i>plur.</i> mabawa)	wawa	Flügel
winter	majira ya baridi		Winter
wire	uzi wa madini, (brass) masango	ng'andu	Draht
wise	-a akili, -a elimu	-a akili	weise
wish (<i>v.</i>)	taka	unga	wünschen
with (<i>instru-</i> <i>mental</i>)	kwa	na	mit
with (<i>accom-</i> <i>panying</i>)	pamoja na, na	hamwenga	mit
without	pasipo	nkahene	ohne
witness	shahidi (<i>plur.</i> masha- hidi)	mwona	Zeuge
woollen	-a joho	upamba	wollen
woman	mwanamke (<i>plur.</i> wa- anake)	mvyele	Weib
wood	mti (<i>material</i>)	mti	Holz
wood (forest)	mwitu	mbago	Wald
word	neno (<i>plur.</i> maneno)	mbuli	Wort

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
work (<i>sb.</i>)	kazi	ndima	Arbeit
work (<i>v.</i>)	fanya kazi	damanya ndima	arbeiten
world	ulimwengu, dunia	dunia	Welt
worse, worst	-baya zayidi	vihye	schlimmer, am schlimmsten
worth	(value, cost) kiasi, tha- mani	kima, chani	wert
wound (<i>sb.</i>)	jeraha (<i>plur.</i> majeraha)	lulase	Wunde
wound (<i>v.</i>)	jeruhi	tunga	verwunden
wounded	majeruhi	wa na lulase	verwundet
wreck	mavunjiko		Wrack, Schiff- bruch
wreckage	mavunjiko		Schiffstrümmer
write	andika	andika, gonda	schreiben
I write	na-andika	naandika	ich schreibe
thou writest	wa-andika	waandika	du schreibst
he writes	a-andika	aandika	er schreibt
we write	twa-andika	chaandika	wir schreiben
you write	mwa-andika	mwaandike	ihr schreib(e)t
they write	wa-andika	waandika	sie schreiben
I shall write	nita-andika	naniandike	ich werde schrei- ben
thou wilt write	uta-andika	nanandike	du wirst schrei- ben
he will write	ata-andika	naandike	er wird schreiben
we shall write	tuta-andika	nakiandike	wir werden schreiben
you will write	mta-andika	namandike	ihr werdet schreiben
they will write	wata-andika	nawaandike	sie werden schreiben
I wrote	nali-andika	nakiandika	ich schrieb
thou wrotest	uli-andika	nauandika	du schrieb(e)st
he wrote	ali-andika	naandika	er schrieb
she wrote	ali-andika	naandika	sie schrieb
we wrote	tuli-andika	nachaandika	wir schrieben
you wrote	mli-andika	namandika	ihr schrieb(e)t
they wrote	wali-andika	nawaandika	sie schrieben
I do not write	si-andika	nkikuandika	ich schreibe nicht
thou dost not write	hakuna	nkahana	du schreibst nicht

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
he does not write	ha-andiki	nkakuandika	er schreibt nicht
we do not write	hatu-andiki	nakakikuandika	wir schreiben nicht
you do not write	hu-andiki	nkamkuandika	ihr schreib(e)t nicht
they do not write	hawa-andiki	nakawakuan-dika	sie schreiben nicht
do you write ?	wa-andika ?	mwandika hegu?	schreiben Sie ?
wrong	si haki, vibaya	nkio kindedi	falsch
yard (of ship)	foramali		Segelstange, Raa
yard (measure)	wari		Yard, 91·4 cm.
year	mwaka (<i>plur.</i> miaka)	mwaka	Jahr
yellow	rangi ya manjano	langi ya manjano	gelb
yes	naam, ndio, inshallah	heye	ja
yesterday	jana	gulo	gestern
yet	hatta sasa	hati haluse	noch
nevertheless	walakini	mna	nichtsdesto- weniger
you	wewe	weye	ihr, Sie
young	-dogo	-teke	jung
your, yours	-ako (<i>sing.</i>), -enu (<i>plur.</i>)	-ako, -enyu	Euer, Ihr
Zanzibar	Unguja	Unguja	Sansibar

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
1	moja ¹	-imwe	eins
2	pili ¹	-idi	zwei
3	tatu ¹	-ntatu	drei
4	'nne ¹	-nne	vier
5	tano ¹	-shano	fünf
6	sita	mtandatu	sechs
7	saba	mfungate	sieben
8	nane ¹	mnane	acht
9	kenda	kenda	neun
10	kumi	kumi	zehn
11	edashara <i>or</i> kumi na moja		elf
12	thenashara <i>or</i> kumi na mbili		zwölf
13	thelat-ashara <i>or</i> kumi na tatu		dreizehn
14	arobat-ashara <i>or</i> kumi na 'nne		vierzehn
15	hamst-ashara <i>or</i> kumi na tano		fünfzehn
16	sit-ashara <i>or</i> kumi na sita		sechzehn
17	sabat-ashara <i>or</i> kumi na saba		siebzehn
18	themant-ashara <i>or</i> kumi na nane		achtzehn
19	tissat-ashara <i>or</i> kumi na kenda		neunzehn
20	asharini		zwanzig
21	asharini na moja		einundzwanzig
22	asharini na mbili		zweiundzwanzig
23	asharini na tatu		dreiundzwanzig
24	asharini na 'nne		vierundzwanzig
25	asharini na tano		fünfundzwanzig
26	asharini na sita		sechszwanzig
27	asharini na saba		siebenundzwanzig
28	asharini na nane		achtundzwanzig

¹ These numerals, when used as *adjectives*, take the prefix of the class of the noun which they qualify (pili, as adjective, becomes -wili). E.g.

m-tu m-moja, one person.
wa-tu wa-wili, two persons.

The other numerals do not change.

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
29	asharini na kenda		neunundzwanzig
30	thelathini		dreissig
31	thelathini na moja		einunddreissig
	(and so on, as above 22-29)		
40	arobaini		vierzig
41	arobaini na moja		einundvierzig
50	hamsini		fünfzig
51	hamsini na moja		einundfünfzig
60	settini		sechzig
61	settini na moja		einundsechzig
70	sabwini		siebzig
71	sabwini na moja		einundsiebzig
80	themanini		achtzig
81	themanini na moja.		einundachtzig
90	tissaini		neunzig
91	tissaini na moja		einundneunzig
100	mia		hundert
101	mia na moja		hundertundeins
110	mia na kumi		hundertundzehn
111	mia na kumi na moja or mia na edashara		hundertundelf
120	mia na asharini		hundertundzwan-
			zig
121	mia na asharini na moja		hundertundein-
			undzwanzig
130	mia na thelathini		hundertund-
			dreissig
200	miteen or mia mbili		zweihundert
201	miteen na moja		zweihundertund-
			eins
210	miteen na kumi		zweihundertund-
			zehn
211	miteen na kumi na moja, or mia na edashara		zweihundertund-
			elf
220	miteen na asharini		zweihundertund-
			zwanzig
221	miteen na asharini na moja		zweihundertund-
			einundzwanzig
230	miteen na thelathini		zweihundertund-
			dreissig

<i>English.</i>	<i>Swahili.</i>	<i>Zigula.</i>	<i>German.</i>
$\frac{1}{2}$	nussu		halb
$\frac{1}{3}$	theluth		ein Drittel
$\frac{1}{4}$	robo		ein Viertel
$\frac{3}{4}$	kassa robo		drei Viertel
both (of them)	-wili <i>or</i> -ote -wili (with proper class prefix)	wose waidi	beide, alle beide
first	-a kwanza (with proper class prefix)	-a kivoko	erster
second	-a pili (with proper class prefix)	-a kaidi	zweiter
third	-a tatu (with proper class prefix)	-a katatu	dritter

QUESTIONS AND ANSWERS

1. TIME AND PLACE.

Where is ?

S. Ni wapi — ?

Z. Kuhi ?

G. Wo ist ?

Where are they ?

S. Wako wapi ?

Z. Wano kuhi ?

G. Wo sind sie ?

They are here.

S. Wapo hapa.

Z. Wano aho.

G. Sie sind hier.

He is not there.

S. Hayuko, hako.

Z. Ha uko.

G. Er ist nicht dort.

Where are you going ?

S. Waenda wapi ?

Z. Waita hahi ?

G. Wo gehen Sie hin ?

Where have you come from ?

S. Umetoka wapi ?

Z. Walawa hahi ?

Wo kommen Sie her ?

I am going home.

S. Nakwenda kwetu.

Z. Nahita kwetu.

G. Ich gehe nach Hause.

We have come from home.

S. Tumetoka kwetu.

Z. Chalawa kwetu.

G. Wir kommen von (zu) Hause.

Come up.

S. Panda juu.

Z. So.

G. Kommen Sie herauf.

Go down.

S. Shuka chini.

Z. Hita hasi.

G. Gehen Sie hinunter.

Turn to the right (left).

S. Enda kwa kuume (kushoto).

Z. Hitula mkono wa kilume
(kumoso).

G. Gehen Sie rechts (links) ab.

Stand still there.

S. Simama huko.

Z. Tula *or* goloka.

G. Ruhig dort ! (command).
Bleiben Sie dort stehen
(politer).

Wait for me.

S. Ningojee.

Z. Unigoje.

G. Warten Sie auf mich.

Come with me.

S. Fuatane nami.

Z. So hamwe na miye.

G. Kommen Sie mit.

Go away.

S. Ondoka.
Z. Hauke.
G. Geht weg.

In which direction ?

S. Upande upi ?
Z. Kwa sila ihi ?
G. In welcher Richtung ?

In that direction.

S. Upande ule.
Z. Kwa sila idya.
G. In jener Richtung.

How far is it ?

S. Ni kadiri gani kufika ?
Z. Ni hale ?
G. Wie weit ist es ?

It is not far.

S. Si mbali.
Z. Nkio hale.
G. Es ist nicht weit.

Two hours' distance.

S. Mwendo wa saa mbili.
Z. Lugendo lwa saa mbili.
G. Zwei Stunden weit.

When will he come ?

S. Atakuja lini ?
Z. Nabule ini ?
G. Wann kommt er ?

At what o'clock ?

S. Saa ngapi ?
Z. Saa nyingahi ?
G. Um wieviel Uhr ?

At six o'clock.

S. Saa thenashara. (Swahili
time.)
Z. Saa mtandatu.
G. Um sechs Uhr.

In the morning.

S. Assubuhi.
Z. Mtontondo.
G. Des Morgens, morgen früh.

At noon.

S. Aththuuri.
Z. Zwa mwe mtwi.
G. Mittags.

In the evening.

S. Jioni.
Z. Mwanagulo.
G. Abends.

Very early.

S. Mapema sana.
Z. Zogolo dikaila.
G. Sehr früh.

It is late.

S. Tumechelewa (we are late).
Z. Kichelwa (we are late).
G. Es ist spät.

How often ?

S. Marra ngapi ?
Z. Nyingahi ?
G. Wie oft ?

What time is it ?

S. Saa ngapi sasa ?
Z. Saa nyingahi ?
G. Wieviel Uhr ist es ?

Two o'clock.

S. Saa nane (Swahili time).
Z. Saa nane.
G. Zwei Uhr.

2. WEATHER AND TIME.

What will the weather be to-day ?*S. Kutakuwaje leo ?**Z. Zuwa ao fula dyelo ?**G. Was ist heute für Wetter ?***Bad, cloudy, foggy weather.***S. Kubaya, mawingu, ukungu.**Z. Fula, maingu, kungugu.**G. Schlechtes Wetter, bewölkt, neblig.***Very fine.***S. Kuzuri, (or) Kweupe sana.**Z. Zuwa nkali.**G. Schönes Wetter.***It is snowing on the mountains.***S. Theluji yanya milimani.**Z. Theluji yanya mwe milima.**G. Es schneit auf dem Gebirge.*

3. THE ROAD.

Say that Mr. — is coming to-day with his men, and the boats must be ready.*S. Wambie, anakuja bwana fulani leo na watu wake, anataka mitumbwi tayari**Z. Longa inga zumbe — abula dyelo hamwe na wantu wakwe, aunga mashua kuwa tayari.**G. Sagen Sie, dass Herr — heute mit seiner Mannschaft ankomme, und dass die Boote bereit gehalten werden müssen.***Which is the shortest way ?***S. Njia ipi iliyo fupi ?**Z. Sila ihi ni guhi ?**G. Welches ist der kürzeste Weg ?***Is it safe on the road ?***S. Je ? pana salama na amani njiani ?**Z. Kuna nkama mwe sila ino ?**G. Ist der Weg gefahrlos ?***How many hours is it to — ?***S. Saa ngapi kufika — ?**Z. Saa nyingahi kubula — ?**G. Wie viele Stunden fährt man nach — ?***Where does this road go ?***S. Njia hii yaenda wapi ?**Z. Sila ino yaita hahi ?**G. Wohin führt dieser Weg ?***Take me to —.***S. Nipeleke kwa —.**Z. Unisindi kize hati —.**G. Führen Sie mich nach —.***Does this road go to — ?***S. Je ? njia hii yaenda kwa — ?**Z. Sila ino yaita — ?**G. Führt dieser Weg nach — ?***Where is there drinking water on this road ?***S. Maji ya kunywa ni wapi njia hii ?**Z. Mazi ya kunywa mwe sila ino ni kuh i ?**G. Wo gibt es Trinkwasser auf diesem Weg ?***Which road goes to — ?***S. Njia ipi ya kwenda kwa — ?**Z. Sila ihi yaita — ?**G. Welcher Weg geht nach — ?*

Is it a camel road ?

S. Njia ya endeka na ngamia ?

Z. Ni sila ya ngamia hegu ?

G. Giebt es ein Kameelweg ?

Is it only a mule road ?

S. Njia ya endeka na nyumbu tu ?

Z. Ni sila ya nyumbu du ?

G. Ist es nur ein Saumpfad ?

Is it only fit for men on foot ?

S. Je ? ya pitikana na watu tu ?

Z. Ni sila ntana kwa wantu wakuhi kwa viga hegu ?

G. Ist der Weg nur für Fussvolk gangbar ?

4. A VILLAGE OR TOWN.

What is this place called ?

S. Hapa panakwitwaje ?

Z. Mzi uno wetangwa mbwani ?

G. Wie heisst dieser Ort ?

How many houses in this village ?

S. Nyumba ngapi katika mji huu ?

Z. Nyumba nyingahi mwe mzi uno ?

G. Wie viele Häuser sind in diesem Dorf ?

Where is the post ?

S. I wapi 'post-ofis' ?

Z. Meli kuhi ?

G. Wo ist die Post ?

Show me the telegraph office.

S. Nionyeshe palipo simu.

Z. Nionyeshe nyumba ya simu.

G. Zeigen Sie mir das Telegraphenamt.

Where is the inn ?

S. I wapi nyumba ya wageni ?

Z. Nyumba ya wageni ni hahi ?

G. Wo ist das Wirtshaus ?

We are going to stay the night here.

S. Tushinde hapa usiku huu.

Z. Nakigone hano dyelo.

G. Wir werden hier übernachten.

5. AT A RIVER.

What is this river called ?

S. Mto huu unakwitwaje jina lake ?

Z. Mto uno wetangwa mbwani ?

G. Wie heisst dieser Fluss ?

How deep is the river ?

S. Mto huu kadiri gani kwenda chini ?

Z. Mto uno ni hatali ?

G. Wie tief ist der Fluss ?

Take me there.

S. Nipeleke huko.

Z. Nisindikize kuya.

G. Führen Sie mich hin.

Show me the nearest ferry.

S. Kivuko kilicho karibu nionyeshe.

Z. Nionyeshe ulalo.

G. Zeigen Sie mir die nächste Fähre.

Get hold of a boat (canoe).

S. Tafuteni mashua (mtumbwi).

Z.

G. Finden Sie mir einen Nachen (Kahn).

Where is the nearest bridge ?

S. Daraja la karibu liko wapi ?

Z. Ulalo u haguhi hegu ?

G. Wo ist die nächste Brücke ?

Hi there, boatman, how much will you charge to take our men across ?

S. Ewe mwenyi mitumbwi, kiasi gani kuvusha watu wetu ?

Z. Hegu mwenye mashua kima chani kuombosa wantu ?

G. Heda ! Bootsmann, wieviel kostet es unsere Leute hinüberzuführen ?

Four pice a head.

S. Kichwa pesa nne.

Z. Killa mntu pesa nne.

G. Vier Pesa per Mann.

Too much. I'll give you two pice.

S. Ni nyingi, takupa pesa mbilimbili

Z. Ni nyingi, nanilavye pesa mbiimbili.

G. Das ist zuviel. Ich gebe Ihnen zwei Pesa.

Is there a raft here ?

S. Pana shapa hapa ?

Z.

G. Gibt es ein Floss hier ?

Is the current strong ?

S. Je ? mkondo wavuta sana ?

Z. Mto wahita kwa nguvu ?

G. Ist der Strom stark ?

Where is the easiest place to swim across ?

S. Wapi palipo rahisi kuvuka kwa kuogelea ?

Z. Hantu lahisi kuomboka kwa kuogela ni kuhi ?

G. Wo ist die beste Stelle zum hinüberschwimmen ?

Take us across.

S. Tuvusheni.

Z. Uomboke hamwenga na suwe.

G. Führen Sie uns hinüber.

You will be rewarded.

S. Utalipwa.

Z. Naupate haki yako.

G. Sie werden belohnt werden.

You must go in front of me.

S. Tangulia wewe.

Z. Shutu unilongole.

G. Sie müssen vor mir gehen.

What lies on the other side ?

S. Kumekuwaje huko ng'ambo ?

Z. Si yani dufu ?

G. Was liegt auf der anderen Seite ?

Is it far to the mouth ?

S. Ni mbali kufika mlangoni ?

Z. Ni hale kubula mlomo wa mto ?

G. Ist es weit bis zur Mündung ?

6. A MOUNTAIN OR HILL.

What is this big mountain called ?

S. Mlima mkubwa huu una kwitwaje, jina lake ?

Z. Zina ya mlima mkulu uno ni mbwani ?

G. Wie heisst dieses grosse Gebirge ?

How high is the mountain ?

S. Mlima huu kadiri gani kwenda juu ?

Z. Utali wa mlima mbwani ?

G. Wie hoch ist das Gebirge ?

What is the easiest way up the hill ?

S. Njia ipi rahisi ya kupandia mlima ?

Z. Sila ihi ni lahisi kukwela mlima ?

G. Welches ist der leichteste Weg um auf diesen Berg zu steigen ?

Can the guns be got up ?

S. Ya pandikana na mizinga ?

Z. Futi zadaha kuletwa kulanga hegu ?

G. Können die Kanonen hinaufgebracht werden ?

Yes, but they cannot be got down on the other side.

S. Inshallah, lakini hakuna kuishusha chini ng'ambo ya pili.

Z. Heye, mna hazikudaha kuselewa upande udyā.

G. Ja, aber sie können auf der anderen Seite nicht herunterkommen.

Isn't it very steep ?

S. Je ? mlima umesimama sana ?

Z. Mlima ni kali hegu ?

G. Ist es nicht sehr steil ?

Isn't it dangerous ?

S. Mlima una hatari, sio ?

Z. Kuna nkama hegu ?

G. Ist es nicht gefährlich ?

Can one get up on horseback ?

S. Yawezekana kupanda kwa frasi ?

Z. Wadaha kukwela frasi ?

G. Kann man zu Pferde hinauf ?

Are there several ways down ?

S. Pana njia nyingi za kushuka chini ?

Z. Kuna sila nyingi kubula hasi hegu ?

G. Gibt es verschiedene Wege herunter ?

Are there any robbers about ?

S. Pana haramia (or, watoro) hapa ?

Z. Hegu kuna wangwizi mwe sila ino ?

G. Gibt es Räuber in der Nachbarschaft ?

7. A FOREST.

How big is the forest ?

S. Mwitū huu umekuwaje ukubwa wake ?

Z. Mbago ni mkulu au mdodo hegu ?

G. Wie gross ist der Wald ?

How wide is it ?

S. Wapataje urefu wake ?

Z. Uhana wa mbago ni mbwani ?

G. Wie breit ist er ?

Where does the road go through the forest ?

S. Njia yapitapi kupenya mwi-tuni ?

Z. Sila yagenda kuhi mwe mbago ?

G. Wohin führt der Weg durch den Wald ?

Can mounted troops get through the forest ?

S. Je ? mwitū huu wapitikana na asikari wapanda frasi ?

Z. Askari za frasi wadaha kuomboka mwe mbago hegu ?

G. Können berittene Truppen durch den Wald kommen ?

Yes, but I don't think one can get through with the guns.

S. Wapitikana, lakini shidda kupitika na mizinga.

Z. Heye, mna bunduki kulu hazikudaha kuomboka.

G. Ja, aber ich glaube nicht, dass man die Geschütze durchbringen kann.

8. THE CAMP.

Unfasten the tent and take it to pieces.

S. N̄goeni hema, kaivunjeni.

Z. Fungula hema, uifunganya.

G. Schlagen Sie das Zelt ab und nehmen Sie es auseinander.

Have you packed it up ?

S. Mmekwisha ifunga ?

Z. Uifunganya pele ?

G. Haben Sie es zusammengepackt ?

Porter, are all the loads ready ?

S. Wee mpagazi, mizigo yote tayari ?

Z. Mpagazi, mizigo yose tayari ?

G. Träger, sind die Lasten bereit ?

All is ready, sir.

S. Yote tayari, bwana.

Z. Yose tayari, zumbé.

G. Alles ist in Bereitschaft, mein Herr.

Blow the trumpet so that no one is left behind.

S. Pigeni tarumbeta, asisalie mtu nyuma.

Z. Toeni zumali asekusigala mntu kunyuma.

G. Blasen Sie die Trompete, damit niemand zurückgelassen werde.

Are all here ?

S. Wote wapo ?

Z. Woseni hano ?

G. Sind alle hier ?

Where shall we camp ?

S. Tupange wapi ?

Z. Chatula hahi ?

G. Wo sollen wir uns lagern ?

Put up the tent for the master.

S. Jengeni hema ya bwana.

Z. Zengeni hema ya zumbé.

G. Schlagen Sie das Zelt auf für den Herrn.

Put it under the trees in the shade.

S. Jengeni chini ya miti panapo kivuli

Z. Zengeni hasi ha miti mwe kizuli.

G. Schlagen Sie es unter den Bäumen auf im Schatten.

Where shall we light a fire ?

S. Wapi tuwashe moto ?

Z. Chagimba moto hahi ?

G. Wo sollen wir ein Feuer anzünden ?

In the middle of the camp.

S. Washeni moto katikati ya kambi.

Z. Gatigati ya tulwe.

G. In der Mitte des Lagers.

To-morrow we make an early start.

S. Kesho tutasafiri mapema.

Z. Luvi chaita na mtotondo.

G. Morgen werden wir früh aufbrechen.

Do you know where water is ? and where there is none ?

S. Unajua pahali panapo maji, na pasipo maji ?

Z. Wamanya hantu ha mazi ? Na hantu nkahene mazi ?

G. Wissen Sie wo es Wasser gibt, und wo keines ist ?

I know, sir.

S. Ninajua, bwana.

Z. Namanya, zumbé.

G. Jawohl, mein Herr.

Is the caravan ready ?

S. Safari yote tayari.

Z. Ntambo tayari ?

G. Ist die Karawane gerüstet ?

We are ready, sir.

S. Tu tayari, bwana.

Z. Suwe tayari, zumbé.

G. Wir sind gerüstet, mein Herr.

Take up the loads and you, guide, go ahead, but not to a too far camp.

S. Sasa chukueni mizigo, wee kirongozi tangulia, lakini usende kambi iliyo mbali sana.

Z. Inuleni mizigo, na weye, mlongozi, longola, mna usekubula tulo hale mno.

G. Nehmen Sie die Lasten auf und Sie, Aufseher, gehen voraus, aber nicht nach einem zu weit entfernten Lager.

Where shall we march to to-day ?

S. Leo twende hatta wapi ?

Z. Dyelo chahita hahi ?

G. Wohin (Wieweit) sollen wir heute marschieren ?

Only go for two hours so that the caravan can keep in good order from the first day.

S. Nendeni mwendo wa saa mbili tu, safari itengenee siku ya kwanza.

Z. Gendeni lugendo lwa saa mbili du, ntambo igendile vyedi.

G. Nur zwei Stunden weit, so dass die Karawane vom ersten Tag an in guter Ordnung bleibe.

Shall we camp after the two hours' march, or only stop for a meal ?

S. Tupange ba'ada ya mwendo wa saa mbili ? Ao tushinde muda wa kulia tu ?

Z. Chatule baada ya lugendo lwa saa mbili ? Wala chasinde kudya nkande du ?

G. Sollen wir nach dem zweistündigen Marsch uns lagern oder nur anhalten, um eine Mahlzeit einzunehmen ?

No, we will camp, and if anything has been forgotten some one can go back to the town ; you go forward with the caravan and I will follow.

S. Ia, tutashinda kule, kama tukisahau kitu, anaweza kuruhi mtu mjini ; tangulia we na safari ; mimi nitakuja nyuma.

Z. Bule, nachatule, naho kikajala kintu, mntu adaha kuuya mwe kaya ; longola na ntambo naho miye nanitonge.

G. Nein, wir werden uns lagern, und sollten wir irgend etwas vergessen haben, so kann jemand nach der Stadt zurückkehren : Sie gehen voraus mit der Karawane und ich werde folgen.

Take up the loads, men (porters), each his own : you who are in front, go slowly so that those behind can follow.

S. Shikeni mizigo, wapagazi, killa mtu mzigo wake : ninyi mlio mbele, msende upesi, wa nyuma wapate kuandamana.

Z. Tozeni mizigo, wapagazi, killa mntu mzigo yake ; nywe wa kulongola, gendeni mpalahole, wa kutongela wadaha kuandama.

G. Nehmen Sie die Lasten auf, Träger, jeder die seinige ; diejenigen an der Spitze müssen langsam gehen, so dass die anderen folgen können.

Overseer, look after your people well, so that they do not escape or fling away their loads, and that others do not stay behind.

S. Ee mnyampara, tezameni sana watu wenu, wasitoroke wala wasitupe mizigo, wengine wasikae nyuma.

Z. Mgookezi, sinyani wantu wako vyedi, wasekunyilika, wala wasekuleka mizigo yawo, na watuhu wasekuikala nyuma.

G. Aufseher, sorgen Sie dafür, dass Ihre Leute nicht entweichen oder die Lasten wegwerfen, und dass andere nicht zurückbleiben.

Right, sir, that is our work ; we will look after them till the caravan arrives safe (at Unyanyembe).

S. Vema, bwana, ni kazi yetu ; tuta-watazama, hatta safari ifike salama (Unyanyembe).

Z. Ni vyedi, zumbé, ni ndima yetu ; tutawasinya hati ntambo naibule vyedi (Unyanyembe).

G. Jawohl, mein Herr, das ist unsere Sache ; wir wollen auf sie Acht geben bis die Karawane glücklich (in Unyanyembe) ankommt.

Have you packed everything ?

S. Umefunga vitu vyote tayari ?

Z. Ufungile vintu vyose visivu ?

G. Haben Sie alles gepackt ?

I have packed, sir.

S. Nimefunga, bwana.

Z. Kifunga kale, zumbé.

G. Ich habe gepackt, mein Herr.

Saddle the donkey in the afternoon, so that I can follow the caravan ; the cook shall go forward with the caravan.

S. Al-'asiri tandika punda, nipate kufuata safari ; mpishi atangulie na safari.

Z. Tandika mpunda kisingi, hati nadaha kutongela ntambo ; mtakwambika nalongele hamwe na ntambo.

G. Satteln Sie den Esel nachmittags, damit ich der Karawane folgen kann ; der Koch wird mit der Karawane vorausgehen.

Sir, will you eat here to-day in the town, or in camp? I must tell the cook.

S. Bwana, wataka kula leo hapa mjini ao kambini? nipate kumwambia mpishi.

Z. Zumbe, waunga kudya dyelo hano ao mwe tulwe? nipate kumgambila mtakwambika.

G. Mein Herr, wollen Sie heute hier in der Stadt essen oder im Lager? Ich muss es dem Koch mitteilen.

To-night I will dine in camp; tell the cook to prepare the meal for seven o'clock: do you wait for me, until I leave camp in the afternoon.

S. Jioni nitakula kambini, mwambie mpishi, chakula sa'a kwanza kiwe tayari; wewe ningoje, hatta niondoke al'asiri.

Z. Nakilo nanikudye mwe tulwe; mgambile mtakwambika nkande iwe tayari saa.

G. Ich werde heute abend im Lager speisen; sagen Sie dem Koch, er solle das Essen für sieben Uhr zubereiten: Sie warten auf mich, bis ich nachmittags das Lager verlasse.

If you have money to buy a donkey, buy one and ride to —.

S. Kama una fedha ya kununua punda, nunue kampande hatta (Unyanyembe).

Z. Inga una feza kugula mpunda, ugule, naho umkwele hati —.

G. Wenn Sie Geld haben um einen Esel zu kaufen, so kaufen Sie einen und reiten nach —.

O, sir, I want to go on foot.

S. Ah bwana, nitakwenda kwa miguu.

Z. Ah zumbe, naunga kuhita kwa viga.

G. Ach, mein Herr, ich wünsche zu Fusse zu gehen.

9. INQUIRIES ABOUT TROOPS.

Have you seen our troops?

S. Umeona asikari wetu?

Z. Uonile mimoza yetu?

G. Haben Sie unsere Truppen gesehen?

Do you know where the troops are?

S. Wajua asikari hao wako wapi?

Z. Mimoza yetu kuhi wamanya?

G. Wissen Sie wo die Truppen sind?

Yes, I saw them by the wood.

S. Naam, naliwaona kule kwenyi mwitu.

Z. Heye, nakiwaona haguhi na mbago.

G. Ja, ich sah sie beim Wald.

What sort of troops and how many are they?

S. Asikari gani? wangapi?

Z. Mimoza yani na mingahi?

G. Was für Truppen und wieviel Mann sind es?

Five thousand, with cavalry and guns.

S. Elfu tano, na wapanda frasi na mizinga.

Z. Magano kumi mashano hamwe na frasi na bunduki.

G. Fünftausend, mit Kavallerie und Kanonen.

Since when are they there ?

S. Tangu lini walipofika huko ?

Z. Askari wabula ini ?

G. Seit wann sind sie dort ?

In which direction have they marched ?

S. Wamekwenda wapi, upande upi ?

Z. Wagendile kwa sila ihi ?

G. In welcher Richtung sind sie marschiert ?

Where is an officer ?

S. Ku wapi akida ?

Z. Mkulu wa askari e kuhi ?

G. Wo ist ein Offizier ?

Take me to the Colonel.

S. Nipeleke kwa amiri.

Z. Unisole hati colonel.

G. Führen Sie mich zum Oberst.

I have a letter from our General.

S. Nina waraka watoka katika jemadari wetu.

Z. Kipata baluwa kulawa general.

G. Ich habe einen Brief von unserem General.

I want a hundred and twenty men.

S. Nataka watu mia u'esherin.

Z. Naunga wantu gana na milongo miidi.

G. Ich muss hundertundzwanzig Mann haben.

10. FOOD AND DRINK.**I am hungry, I wish to eat.**

S. Nina njaa, nataka kula.

Z. Nalumwa sala, naunga kudya.

G. Ich bin hungrig und wünsche zu essen.

I am thirsty, I wish to drink.

S. Nina kiu, nataka kunywa.

Z. Nalumwa nkilu, naunga kunywa.

G. Ich habe Durst und wünsche zu trinken.

Where can I get food ?

S. Nipate wapi chakula ?

Z. Nadaha kupata nkande kuhi ?

G. Wo kann ich zu essen bekommen ?

Innkeeper, we want a meal.

S. Ee bwana, twataka chakula.

Z. Chaunga nkande.

G. Herr Wirt, wir wünschen zu essen.

Give me something to drink.

S. Unipe cha kunywa.

Z. Ninke mazi (water), mvinyo (wine).

G. Geben Sie mir etwas zu trinken.

Give me drinking water.

S. Nipe maji ya kunywa.

Z. Ninke mazi ya kunywa.

G. Geben Sie mir Trinkwasser.

Hurry up, we haven't much time.

S. Haya! haya! (*or*, hima! hima! *or* chap! chap!)
tusichelewe (lest we be late).

Z. Nyaguliza nkakikudaha kuchelwa.

G. Eilen Sie sich, wir haben nicht viel Zeit.

I am going to pay for it.

S. Nitalipa.

Z. Nanilihe.

G. Ich werde dafür bezahlen.

Have you enough for all my men?

S. Unavyo wa kuwatosha watu wangu wote?

Z. Nkande zatosha kwa wantu wose?

G. Haben Sie genug für alle meine Leute?

Is the water good here?

S. Je? maji hapa mazuri, mema?

Z. Mazi ni matana hano?

G. Ist das Wasser hier gut?

How many fowls shall I buy?

S. Kuku ngapi ninunue?

Z. Nguku zingahi nanigule?

G. Wie viele Hühner soll ich kaufen?

Have you fresh eggs?

S. Una mayayi mabichi?

Z. Una matagi yedi?

G. Haben Sie frische Eier?

Bring bread, ham, and cheese.

S. Lete mkate, nyama (meat), jibini.

Z. Lete mgate, nyama ya nguruwe na cheese.

G. Bringen Sie uns Brot, Schinken und Käse.

Bring us coffee with milk.

S. Lete kahawa na maziwa.

Z. Ukiletele kahawa na mele.

G. Bringen Sie uns Kaffee mit Milch.

The transport's (carriers') rations are finished.

S. Posho la wapagazi limekwisha.

Z. Nkande ya wapagazi iheza.

G. Die Rationen für den Transportzug sind alle.

Call the cook.

S. Mwrite mpishi.

Z. Mwitange mtakwambika.

G. Lassen Sie den Koch kommen.

There is the cook.

S. Mpishi huyo (yupo).

Z. Mtakwambika ni yuno.

G. Da ist der Koch.

Bring us the bill.

S. Lete hati.

Z. Lete hisabu.

G. Bringen Sie uns die Rechnung.

How much do we owe?

S. Kiasi gani tukulipe?

Z. Chatigizazeze?

G. Was schulden wir?

How much does this cost?

S. Kiasi gani hicho?

Z. Thamani ya kintu kile ni mbwani?

G. Wieviel kostet das?

11. BILLETS, LODGING AND STABLING.

I want a house (lodging).

- S. Nataka nyumba (ya kupanga).
 Z. Naunga nyumba.
 G. Ich muss eine Wohnung (Quartier) haben.

I want quarters for 50 men.

- S. Nataka nyumba za (kuwekea) watu hamsini.
 Z. Naunga nafasi kwa wantu milongo mishano.
 G. Ich muss Quartier für fünfzig Mann haben.

How many rooms has your house ?

- S. Nyumba yako ina vyumba vingapi ?
 Z. Vyumba vingahi mwe nyumba yako ?
 G. Wie viele Zimmer sind in Ihrem Hause ?

Give me better quarters.

- S. Nipe nyumba zilizo nzuri.
 Z. Naunga nyumba ntana.
 G. Geben Sie mir besseres Quartier.

Have you found me quarters yet ?

- S. Je ? hujanitafutia nyumba ?
 Z. Hegu unipatile nyumba ?
 G. Haben Sie mir schon das Quartier gefunden ?

Is the owner of the house there ?

- S. Mwenyi nyumba yumo ?
 Z. Mwenye nyumba yumo ?
 G. Ist der Hauseigentümer da ?

Where is the owner of the house ?

- S. Yu wapi mwenyeji ?
 Z. Mntu wa nyumba e kuhi ?
 G. Wo ist der Eigentümer des Hauses ?

He is inside, asleep.

- S. Yumo, amelala.
 Z. Yumo, agonile.
 G. Er ist drinnen und schläft.

Wake him up and say that some one wants to speak to him.

- S. Mwamshe, mwambie, yuko mtu anataka kusema naye.
 Z. Msetule, mgambile, mntu aunga kulonga naye.
 G. Wecken Sie ihn auf und sagen Sie ihm, dass jemand mit ihm sprechen wolle.

The master is awake, please come in.

- S. Bwana ameamka, tafadhal ingia.
 Z. Zumbe e meso uingile.
 G. Der Herr ist wach, bitte treten Sie ein.

Light the fire, please.

- S. Tafathali uwashe moto.
 Z. Koleza moto.
 G. Stecken Sie das Feuer bitte an.

I want stabling for 16 horses.

- S. Nataka mazizi ya (kuwekea) frasi kumi na sita.
 Z. Naunga nyumba kwa frasi kumi na mtandatu.
 G. Ich muss Stallung für sechzehn Pferde haben.

Thanks, we want nothing more.

- S. Ahsante, hatutaki kitu tena.
 Z. Ahsante, yatosha.
 G. Danke, wir brauchen sonst nichts.

Tell all people not to be afraid.

- S. Waambie watu wote wasiogope.
 Z. Uwagambile wantu wasekuogoha.
 G. Sagen Sie den Leuten, sie sollen keine Angst haben.

Where is there some clean water ?

- S. Ku wapi maji safi ?
 Z. Mazi matana kuhi ?
 G. Wo gibt es reines Wasser ?

Clear those houses ; we are going to quarter our men in them.

- S. Tengenezeni nyumba hizo, tuweke watu wetu humo.
 Z. Foseni vintu, chaunga vyumba kwa watu wetu.
 G. Räumen Sie diese Häuser ; wir werden unsere Mannschaft darin einquartieren.

Have you smallpox in this village ?

- S. Pana ndui mjini humu ?
 Z. Wantu wana nduwi mwe mzi uno ?
 G. Gibt es Pocken in diesem Dorf ?

Tell me the house where there are sick men.

- S. Niambie nyumba mulimo wagonjwa.
 Z. Unionyesa nyumba aho waikala watamu.
 G. Sagen Sie mir, in welchem Hause die Kranken sind.

Is it feverish here ?

- S. Homa nyingi hapa ?
 Z. Kuna homa hano ?
 G. Gibt es Fieber hier ?

Is it healthy here ?

- S. Je ? kwema huku, kwa afya ?
 Z. Si ino haina utamu hegu ?
 G. Ist es gesund hier ?

12. STRANGERS OR SUSPECTS.

Stop ! or I shall shoot.

- S. Simama wee ! usiposimama, nitakupiga.
 Z. Goloka ! ao nanitowe futi.
 G. Halt ! oder ich schiesse.

Don't move from the spot.

- S. Kaa huko uliko.
 Z. Usekulawa hantu hano.
 G. Nicht vom Fleck rühren.

Stand a little farther off.

- S. Jitenge mbali kidogo.
 Z. Sogela hadodo.
 G. Etwas weiter weg da.

Come closer.

- S. Karibu.
 Z. So karibu.
 G. Kommen Sie näher.

Where do you live ?

- S. Wakaa wapi ?
 Z. Waikala hahi ?
 G. Wo wohnen Sie ?

Are you alone ?

- S. Weye pekeyako ?
 Z. Weye ikedu ?
 G. Sind Sie allein ?

What were you doing last night ?

- S. Weye, ulifanya nini leo usiku ?
 Z. Nautendazeze dyelo na kilo ?
 G. Was machten Sie gestern abend ?

Turn round.

- S. Geuka.
 Z. Hitula.
 G. Drehen Sie sich um.

Hands up !

- S.* Mikono juu !
Z. Mikono kulanga !
G. Hände hoch !

Put down your arms.

- S.* Weka bunduki (gun) chini.
Z. Sela mikono yako (of body),
 sela mata yako (weapons).
G. Arme ab (of body), Waffen niederlegen (weapons).

Surrender.

- S.* Jitoa.
Z. So ! Usekutowana vituhu.
G. Ergeben Sie sich.

You may not talk to any one.

- S.* Usiseme na mtu.
Z. Usekutamwila na mntu.
G. Sie dürfen mit niemandem sprechen.

You are trying to deceive me.

- S.* Wataka kunidanganya.
Z. Wageza kunidanta.
G. Sie versuchen mich zu betrügen.

You are lying !

- S.* Mwongo wee !
Z. Walonga ulimi !
G. Sie lügen !

You are a spy !

- S.* Mpelelezi wee !
Z. Weye ni mvulizi !
G. Sie sind ein Spion !

You are under arrest.

- S.* Utafungwa.
Z. Weye ni mfungwa wangu.
G. Sie sind verhaftet.

Take off your belt.

- S.* Vua mshipi.
Z. Usa msipi wako.
G. Nehmen Sie Ihren Gürtel ab.

If you behave you will be safe.

- S.* Jiweke vema, utakaa salamu.
Z. Ukaikala vyedi nauwe salama.
G. Wenn Sie sich gut betragen, so sind Sie ausser Gefahr.

13. WOUNDS OR SICKNESS.

Do you feel better ?

- S.* Hujambo kidogo ?
Z. Waonazeze ?
G. Geht es Ihnen besser ?

Do you feel worse ?

- S.* Huwezi ?
Z. Utamu uongezwa ?
G. Fühlen Sie sich schlechter ?

What is the matter ?

- S.* Una nini ?
Z. Una mbuli ?
G. Was ist los ?

I am wounded.

- S.* Nina jeraha.
Z. Kipatile lulase.
G. Ich bin verwundet.

Sit down, lie down.

- S.* Kaa kitako, lala.
Z. Ikala, gona.
G. Setzen Sie sich, legen Sie sich nieder.

Undress yourself.

- S.* Vua nguo.
Z. Chopola suke.
G. Kleiden Sie sich aus.

Give me water.

- S. Nipe maji.
Z. Ninke mazi.
G. Geben Sie mir Wasser.

Here is water and brandy.

- S. Maji haya na mvinyo (wine).
Z. Mazi yaha naho brandy.
G. Hier ist Wasser und Branntwein.

Give me a bandage.

- S. Lete kitambaa.
Z. Ninke kitambala.
G. Geben Sie mir einen Verband.

Help me with the bandaging.

- S. Nisayidie kufunga.
Z. Uniambize kugela vitambala.
G. Helfen Sie mir mit dem Verbinden.

Where are you wounded ?

- S. Jeraha iko wapi ?
Z. Upatile lulase kubi ?
G. Wo sind Sie verwundet ?

In the knee, the foot.

- S. Pa goti, pa mguu.
Z. Mwe vindi, mwe kiga.
G. Am Knie, am Fuss.

Keep quiet.

- S. Tulia kimya.
Z. Nyamala.
G. Seien Sie ruhig.

You mustn't speak.

- S. Siseme neno.
Z. Usekulonga mbuli.
G. Nicht sprechen.

Go to the doctor and tell him to come at once.

- S. Nenda kwa mganga, mwambie aje sasa hivi.
Z. Genda kwa mganga, naho umgambile anyagulize kwiza.
G. Gehen Sie zum Arzt und sagen Sie ihm, er soll sofort kommen.

Take this medicine.

- S. Dawa hii unywe.
Z. Uunywe mti uno.
G. Nehmen Sie diese Medizin.

Take this man to hospital.

- S. Mtu huyu umpeleke nyumbani kwa wagonjwa.
Z. Genda na mntu yunq hati nyumba ya dawa.
G. Nehmen Sie diesen Mann in das Krankenhaus.

14. GENERAL PHRASES.

How do you do, Sir ?

- S. Jambo, bwana ?
Z. Waonazeze, zumbi.
G. Wie geht es Ihnen, mein Herr ?

Good morning.

- S. Subulkheri.
Z. Hagonile (answer Nihedi).
G. Guten Morgen.

Good evening.

- S. Masalkheri.
Z. Hosindile (answer Nihedi).
G. Guten Abend.

How are you ?

- S. U hali gani ?
Z. Waonazeze ?
G. Wie geht es Ihnen ?

I have no money.*S. Sina fedha.**Z. Nkahaña feza.**G. Ich habe kein Geld.***I am sorry.***S. Najuta.**Z. Hai !**G. Das tut mir leid.***What is the news ?***S. Habari gani ?**Z. Mbuli yako ni mbwani ?**G. Was für Nachrichten gibt es ?***Do you know English ?***S. Je? wajua kusema Kiingereza ?**Z. Hegu wamanya Kingereza ?**G. Sprechen Sie Englisch ?***Speak slowly.***S. Sema polepole.**Z. Longa mpalahole.**G. Sprechen Sie langsam.***Listen to me.***S. Sikiliza.**Z. Tegeleza.**G. Hören Sie mich an.***Please.***S. Tafathali.**Z. Tafathali.**G. Bitte.***Thank you.***S. Ahsante.**Z. Nautogola, ahsante.**G. Danke.***Do you understand ?***S. Umesikia ? (or wafahamu ?)**Z. Wamanya vyedi ?**G. Verstehen Sie ?***I don't understand.***S. Sisikii (or sifahamu).**Z. Hakikumanya vyedi.**G. Ich verstehe nicht.***Does he know Swahili ?***S. Anajua Kiswahili ?**Z. Amana Kiswahili ?**G. Versteht er Suahelisch ?***All right.***S. Vema. Hewallah.**Z. Ni vyedi.**G. Ganz gut.***There is no news.***S. Hapana habari.**Z. Nkahaña mbuli.**G. Es gibt nichts Neues.***Since when ?***S. Tangu lini ?**Z. Tangu ini ?**G. Seit wann ?***How do you know ?***S. Wajuaaje ?**Z. Wamanyazeze ?**G. Woher wissen Sie das ?***It is false.***S. Ni uwongo.**Z. Nkio kweli.**G. Es ist falsch.***I am glad.***S. Nafurahi.**Z. Nafaigwa.**G. Das freut mich.***Don't forget.***S. Usisahau.**Z. Usekujala.**G. Vergessen Sie (es) nicht.*

Possible.

- S.* Yawezekana (it is).
Z. Kudaha.
G. Möglich.

Rain threatens.

- S.* Mvua inakuja.
Z. Fula i karabu.
G. Es sieht nach Regen aus.

It is moonlight.

- S.* Sasa balamwezi.
Z. Mlenge haluse.
G. Der Mond scheint.

How old are you ?

- S.* Umri wako miaka mingapi ?
Z. Una miaka ming'ahi ?
G. Wie alt sind Sie ?

I must go.

- S.* Sina buddi kwenda.
Z. Shuti nigende.
G. Ich muss gehen.

Come back.

- S.* Rudi (*plur.* rudini).
Z. Uya.
G. Kommen Sie zurück.

What did he say ?

- S.* Alisema nini ?
Z. Alongazeze ?
G. Was sagte er ?

Excuse me.

- S.* Kunrathi.
Z. Unilekele.
G. Entschuldigen Sie (mich).

Tell me.

- S.* Nambie.
Z. Nigambile.
G. Sagen Sie (es) mir.

There is a fire.

- S.* Panapo moto.
Z. Kuna moto.
G. Es brennt.

Impossible.

- S.* Haiwezekani (it is).
Z. Haikudamanyika.
G. Unmöglich.

Come here.

- S.* Njoo hapa (*plur.* njooni).
Z. So hano (*plur.* soni).
G. Kommen Sie hieher.

Please sit down.

- S.* Tafathali kaa kitako.
Z. Karibu, ikala hasi.
G. Bitte setzen Sie sich.

God grant it !

- S.* Inshallah !
Z. Mlungu atamilwe !
G. So gebe Gott !

It is true.

- S.* Ni kweli.
Z. Ni kindedi.
G. Es ist wahr.

What are your wishes ?

- S.* Wataka nini ?
Z. Waunga mbwani ?
G. Was wünschen Sie ?

Thank God !

- S.* Al-hamdu illahi !
Z. Mlungu atogolwe !
G. Gott sei Dank !

You are welcome.

- S.* Karibu, karibu (Come near !
 Come in !)
Z. Karibu, karibu.
G. Sie sind willkommen.

Is he at home ?*S.* Yuko kwao ?*Z.* Yeye ni kwao ?*G.* Ist er zu Hause ?**Who is it ?***S.* Ni nani ?*Z.* Ni ani ?*G.* Wer ist es ?**Who are you ?***S.* Nani wee ?*Z.* Niani weye ?*G.* Wer sind Sie ?**Let him enter.***S.* Mkaribishe.*Z.* Aingile.*G.* Lassen Sie ihn eintreten.**Does the water boil ?***S.* Je ? maji yachemka ?*Z.* Hegu mazi yaambika ?*G.* Kocht das Wasser ?**Yes.***S.* Ndio, naam, inshallah.*Z.* Heye.*G.* Ja, jawohl.**Good-bye.***S.* Kwa heri.*Z.* Ni luvi.*G.* Adieu.**Au revoir.***S.* Ya kuonana.*Z.* Ni luvi.*G.* Auf Wiedersehen**Pleasant journey.***S.* Safari ya heri.*Z.* Ugende mpeho*G.* Glückliche Reise.**Of course.***S.* Naam, billa shaka, inshallah.*Z.* Ni kindedi.*G.* Natürlich.**What did you say ?***S.* Ulisema nini ?*Z.* Ulongazeze ?*G.* Was sagten Sie ?**You are mistaken.***S.* Umekosa.*Z.* Wabananga mbuli.*G.* Sie irren sich.**No matter.***S.* Haithuru, ni mamoja.*Z.* Hai zulu.*G.* Das macht nichts.

APPENDIX I

CLIMATIC TABLES

Temperature,¹ Humidity, Rainy Days, Sunshine.

COASTAL DISTRICT: DAR-ES-SALAAM

6° 49' S. ; 39° 18' E. ; ht. above sea-level, 8 metres.

	<i>Air Temp. Monthly Mean.</i>	<i>Humidity.</i>		<i>Number of Rainy Days.</i>	<i>Hours of Sunshine.</i>
		<i>Morn.</i>	<i>Aft.</i>		
January	81.9°	84	71	8	8.5
February	81.7	85	70	5	8.3
March	80.8	94	73	11	8.0
April	78.4	93	76	17	5.8
May	76.6	93	71	16	6.4
June	74.3	92	62	4	7.5
July	73.8	93	63	7	7.1
August	73.6	93	64	5	7.4
September	74.7	91	68	5	8.4
October	76.6	90	70	6	9.2
November	79.3	88	73	10	9.6
December	81.1	85	73	9	8.8
Year	77.9	90	70	103	7.9

LAKE COUNTRY: NEUWIED ON UKERWE I., VICTORIA NYANZA

2° 0' S. ; 33° 2' E. ; ht. above sea-level, 1,216 metres.

	<i>Air Temp. Monthly Mean.</i>	<i>Humidity.</i>		<i>Number of Rainy Days.</i>	<i>Hours of Sunshine.</i>
		<i>Morn.</i>	<i>Aft.</i>		
January	72.1°	84	63	9	7.2
February	72.0	85	66	10	8.3
March	72.5	84	65	12	8.6
April	70.9	88	71	20	7.1
May	71.1	83	61	11	9.4
June	71.6	79	51	3	9.3
July	70.9	73	45	2	9.2
August	70.9	77	54	6	8.6
September	72.7	72	51	4	8.6
October	72.9	72	57	9	8.4
November	71.8	82	65	15	8.0
December	70.5	86	68	15	6.7
Year	71.6	81	60	116	8.3

¹ In degrees Fahrenheit.

INLAND TABLELAND : TABORA

5° 1' S. ; 32° 49' E. ; ht. above sea-level, 1,230 metres.

	<i>Air Temp. Monthly Mean.</i>	<i>Humidity.</i>		<i>Number of Rainy Days.</i>	<i>Hours of Sunshine.</i>
		<i>Morn.</i>	<i>Aft.</i>		
January	71·6°	90	68	12	
February	72·0	90	66	12	
March	72·0	88	65	13	
April	70·9	89	66	12	
May	70·9	82	52	2	
June	70·2	76	43	1	
July	70·2	73	42	0	
August	73·2	69	41	0	
September	75·6	66	39	1	
October	77·5	69	45	3	
November	75·4	76	47	9	
December	71·6	88	65	16	
Year	72·5	79	52	81	

MOUNTAIN DISTRICT IN W. USAMBARA : KWAI

4° 45' S. ; 38° 18' E. ; ht. above sea-level, 1,640 metres.

	<i>Air Temp. Monthly Mean.</i>	<i>Humidity.</i>		<i>Number of Rainy Days.</i>	<i>Hours of Sunshine.</i>
		<i>Morn.</i>	<i>Aft.</i>		
January	65·3°	80	57	8	7·3
February	65·5	82	59	9	6·8
March	64·4	87	65	12	6·3
April	62·8	88	70	14	4·5
May	59·9	88	77	16	2·6
June	56·3	85	71	5	3·4
July	56·1	83	72	9	2·6
August	56·5	80	69	5	3·0
September	58·8	76	64	3	4·5
October	61·2	79	58	6	5·4
November	62·8	81	62	13	5·0
December	64·8	82	59	11	7·7
Year	61·2	82	65	111	4·9

MOUNTAIN DISTRICT ROUND KILIMANJARO : MANBA

3° 17' S. ; 37° 30' E. ; ht. above sea-level, 1,550 metres.

	<i>Air Temp. Monthly Mean.</i>	<i>Humidity.</i>		<i>Number of Rainy Days.</i>	<i>Hours of Sunshine.</i>
		<i>Morn.</i>	<i>Aft.</i>		
January	67·6°	82	60	8	
February	68·4	77	54	7	
March	67·8	82	55	11	
April	66·0	90	64	24	
May	62·8	92	75	20	
June	59·5	91	72	18	
July	58·5	93	74	17	
August	59·0	90	65	13	
September	61·3	89	57	9	
October	64·8	89	53	11	
November	66·4	85	56	13	
December	66·9	25	59	13	
Year	64·0	87	62	164	

MOUNTAIN DISTRICT IN KONDELAND : TANDALA

9° 23' S. ; 34° 14' E. ; ht. above sea-level, about 2,000 metres.

	<i>Air Temp. Monthly Mean.</i>	<i>Humidity.</i>		<i>Number of Rainy Days.</i>	<i>Hours of Sunshine.</i>
		<i>Morn.</i>	<i>Aft.</i>		
January	59·2°	91	74	24	
February	58·6	91	77	23	
March	59·7	92	75	25	
April	58·5	94	79	25	
May	58·9	92	80	12	
June	53·2	95	68	1	
July	51·8	87	62	2	
August	54·3	84	57	1	
September	57·7	75	39	3	
October	61·5	76	41	5	
November	62·6	77	49	7	
December	60·2	86	70	20	
Year	57·7	87	64	148	

Mean Rainfall in Inches. SEA COAST

	<i>Tanga.</i>	<i>Pangani.</i>	<i>Saadani.</i>	<i>Baga- mogo.</i>	<i>Dar-es- Salaam.</i>	<i>Zalale.</i>	<i>Chole (Mafia).</i>	<i>Kiwa Kiv.</i>	<i>Linde.</i>	<i>Mikin- dani.</i>
No. of years' observations.	16-0	9-7	8-2	11-8	16-5	6-0	6-2	10-7	11-5	8-3
January .	1-61	2-56	3-03	3-42	3-31	4-05	5-12	5-27	4-56	4-92
February .	2-13	1-46	1-81	1-65	2-13	3-58	4-09	3-94	4-45	5-16
March .	3-98	4-33	4-33	3-98	5-08	5-04	7-67	6-85	6-56	6-26
April .	11-89	10-91	7-44	10-79	11-89	13-66	17-75	8-30	5-62	6-10
May .	13-15	9-13	5-27	7-71	7-60	5-00	6-58	2-68	1-61	1-65
June .	2-60	2-05	1-93	1-46	1-22	1-93	2-68	0-59	0-12	0-47
July .	4-57	3-19	0-98	1-42	1-77	1-14	1-22	0-75	0-16	0-35
August .	3-15	1-50	1-57	1-10	1-10	0-35	0-98	0-47	0-43	0-32
September .	3-27	1-53	0-67	0-98	1-26	0-55	0-35	0-55	0-43	0-59
October .	4-06	2-64	1-97	1-38	1-26	1-06	0-87	0-47	0-91	0-39
November .	8-55	4-96	4-76	3-74	3-03	2-32	2-09	1-53	2-36	1-14
December .	2-44	3-03	4-14	4-41	3-82	4-05	4-33	4-76	5-04	7-71
Year .	61-40	47-28	37-92	42-04	43-51	42-76	52-74	36-18	32-26	35-08
Largest .	83-59	69-41	54-02	68-75	56-85	—	61-02	—	—	69-02
Smallest .	23-39	31-37	22-05	27-56	19-41	—	42-04	—	—	22-17

COAST HINTERLAND: NGURU AND ULUGURU

	<i>Lewa.</i>	<i>Kwandoo (Hand).</i>	<i>Mandera.</i>	<i>Mhonda.</i>	<i>Morogoro.</i>	<i>Kisaki.</i>	<i>Kiserawe.</i>	<i>Mohoro.</i>	<i>Liwale.</i>	<i>Masasi.</i>
No. of years' observations.	15-3	4-6	6-0	6-0	6-5	6-7	8-6	12-1	7-0	3-0
January .	1-61	3-19	2-20	8-77	4-37	4-76	4-49	5-70	9-72	4-41
February .	2-16	1-30	2-40	6-18	3-31	2-91	3-31	4-41	7-09	4-80
March .	4-29	4-53	5-20	10-90	8-61	6-06	5-62	6-69	6-26	8-14
April .	10-74	7-01	7-87	15-32	11-44	9-91	11-37	10-15	4-01	5-54
May .	11-21	3-74	3-78	5-12	3-31	7-51	6-06	3-62	0-59	0-47
June .	2-20	0-59	1-53	2-52	2-05	0-98	1-10	1-02	0-04	0-24
July .	3-42	0-94	1-14	2-60	1-30	1-02	1-30	0-47	0-16	—
August .	2-79	0-67	0-71	2-60	0-43	0-35	0-67	1-02	0-04	—
September .	2-64	1-30	1-14	1-30	0-83	0-55	1-22	0-75	0-27	0-20
October .	3-98	0-94	1-34	3-03	0-87	0-75	2-64	1-22	0-39	0-12
November .	7-51	2-56	3-46	3-78	1-38	1-53	3-90	3-42	0-90	0-55
December .	4-01	3-74	3-38	8-50	6-22	2-36	5-00	5-12	5-70	3-31
Year .	56-61	30-56	34-17	70-63	44-14	38-74	46-70	43-62	35-20	27-80
Largest .	72-71	36-07	—	90-04	62-68	48-90	69-53	53-27	48-59	38-11
Smallest .	38-82	17-96	—	68-42	34-56	26-25	32-63	29-73	31-02	23-86

CLIMATIC TABLES

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USAMBARA, PARE, KILIMANJARO, MERU.

	<i>Msalabani Magila.</i>	<i>Amani.</i>	<i>Lutindi.</i>	<i>Balangai.</i>	<i>Kwai.</i>	<i>Mtalo.</i>	<i>Mtai.</i>	<i>Mamba.</i>	<i>Moshi.</i>	<i>Arusha.</i>
No. of years' observations	12-6	8-5	7-5	8-3	12-4	6-3	8-2	5-0	10-1	7-7
January .	2.48	4.05	5.36	3.27	3.46	5.78	2.05	3.66	1.50	2.99
February .	2.56	2.32	3.11	4.21	3.46	3.94	1.92	3.62	2.44	2.95
March .	4.61	5.40	7.41	7.55	4.18	5.08	2.32	6.34	3.90	8.94
April .	10.20	15.31	24.37	17.88	5.55	21.88	5.04	10.20	14.37	13.35
May .	11.61	12.01	22.12	21.73	4.61	2.95	4.88	8.70	11.30	6.61
June .	1.97	4.61	3.50	4.29	1.14	0.75	0.62	2.68	2.09	1.38
July .	3.62	4.33	4.17	7.01	1.34	0.35	0.70	4.53	2.10	0.71
August .	2.01	3.23	2.64	3.15	0.27	0.35	0.60	2.68	0.98	0.35
September	2.24	4.37	3.66	2.95	0.51	0.27	0.60	2.60	0.94	0.59
October .	4.41	7.09	7.32	5.91	1.53	2.52	1.14	2.95	1.10	1.89
November	5.59	7.99	6.42	7.13	3.94	10.87	3.85	7.05	3.27	5.43
December	4.92	6.61	5.51	5.83	4.37	11.22	5.16	5.47	2.68	3.70
Year .	56.22	77.32	95.59	90.91	34.36	65.96	28.88	60.48	46.67	48.89
Largest .	68.03	93.82	124.89	142.68	43.74	64.29	42.56	—	—	68.31
Smallest .	28.47	53.82	59.49	49.37	19.41	34.77	24.53	—	—	40.95

INLAND TABLELAND, USAGARA, UHEHE, UPOGORO,
UNGONI, UNYIKA

	<i>Ikoma.</i>	<i>Kondoa Irangi.</i>	<i>Kilosa. .</i>	<i>Mpapwa.</i>	<i>Kilima- tinde.</i>	<i>Tabora.</i>	<i>Tozama- ganga near Iranga.</i>	<i>Mahenge.</i>	<i>Songea.</i>	<i>Itaka Unyika.</i>
No. of years' observations.	12-6	8-5	7-5	8-3	12-4	6-3	8-2	5-0	10-1	7-7
January .	2.05	3.74	5.44	5.20	4.21	5.30	5.32	13.45	9.67	8.10
February .	3.66	3.98	5.23	4.60	3.62	4.57	4.76	9.96	10.55	6.14
March .	2.91	4.09	4.76	3.94	4.68	5.78	4.53	12.24	11.33	6.34
April .	6.93	3.42	5.58	2.87	4.05	6.10	2.32	12.91	5.86	4.84
May .	1.85	0.55	2.32	0.47	0.55	0.63	0.27	3.66	0.71	2.68
June .	0.51	0.04	0.35	0.04	0.08	0.20	0.04	1.77	—	0.08
July .	0.55	—	0.75	0.04	—	—	—	1.14	0.04	0.08
August .	1.97	—	0.59	—	—	—	—	0.67	0.16	—
September .	1.50	—	0.71	—	—	0.20	0.04	0.75	0.16	0.08
October .	1.73	0.08	0.83	0.04	0.04	0.39	0.08	1.30	1.69	0.16
November .	1.73	0.67	1.93	0.94	0.75	2.99	0.94	2.24	1.38	0.98
December .	2.87	5.43	2.83	4.57	4.41	5.08	2.32	10.19	6.62	7.94
Year .	28.26	22.00	31.34	22.71	22.40	31.06	20.63	70.39	48.19	37.60
Largest .	32.63	—	38.15	30.36	25.83	47.28	24.33	79.88	60.75	49.52
Smallest .	27.29	—	29.78	13.66	18.58	15.59	15.79	62.05	40.16	30.27

LAKE DISTRICT

	<i>Shirati.</i>	<i>Newwied on Ukerewe.</i>	<i>Mwanza.</i>	<i>Bukoba.</i>	<i>Ishangi Ruanda.</i>	<i>Uzumbura.</i>	<i>Ujiji.</i>	<i>Bismarckburg.</i>	<i>New-Langenburg.</i>	<i>Mwaga.</i>
No. of years' observations. }	7-6	5-2	9-4	8-0	5-0	8-0	7-6	5-0	7-6	6-7
January .	1-76	5-47	2-79	3-70	4-80	3-62	4-53	5-94	9-96	5-04
February .	2-36	2-72	3-03	5-20	4-88	3-46	5-08	6-50	8-50	5-75
March .	2-36	5-67	5-59	8-31	4-17	5-08	5-20	4-68	15-00	15-16
April .	5-55	11-77	9-57	15-47	4-72	6-81	6-18	2-71	15-83	30-55
May .	5-83	4-33	3-23	12-44	4-09	2-56	1-89	0-47	13-31	18-27
June .	1-22	1-22	1-46	1-61	0-67	0-27	0-20	0-08	2-09	6-46
July .	0-59	0-20	0-08	1-77	0-24	0-04	—	—	2-13	2-69
August .	0-35	3-86	1-06	2-36	2-09	0-16	—	—	1-81	1-65
September .	0-87	0-79	1-93	3-50	3-82	1-34	0-47	—	1-53	0-16
October .	1-42	4-53	3-15	4-84	6-02	2-60	1-69	0-20	3-62	1-34
November .	2-05	5-75	4-76	8-62	4-53	3-90	3-70	2-24	3-27	3-35
December .	2-72	6-89	4-72	6-89	6-42	4-12	4-53	5-63	6-46	6-81
Year .	27-08	53-19	41-38	74-72	46-46	33-98	33-47	28-47	83-51	97-20
Largest .	38-39	61-46	48-23	—	52-88	48-78	—	—	100-04	94-92
Smallest .	22-99	48-74	36-42	—	39-39	22-68	—	—	73-11	72-05

APPENDIX II

WEIGHTS AND MEASURES

Swahili (Kisuaheli) Measures of Length.

- 1 Wanda = a finger's breadth.
- 1 *Shibiri*¹ = span between the thumb and little finger = 22.86 cm. (9 in.).
- 1 Mkono = 2 shibiri = length of forearm = 45.72 cm. 18 in.).
- 1 Wari = twice length of forearm.
- 1 Shuka = 1 upande = four times length of forearm.
- 1 Pima = 4 mikono = 1.829 metres (72 in.).
- 1 Doti = 2 pima, eight times length of forearm = 3.658 metres (12 ft.).

Distances are measured in hours—(a) for caravans, (b) for runners.
See p. 301.

Notes for Linear Measures.

1 metre = 39.37 inches.

The small entrenching tools of the Askari equipment measured without the head = 0.5 metres (19½ in.).

A side of the Askari tent canvas = 1.6 metres (63 in.).

The Light Infantry rifle (*Jägerbüchse*) 71 = 1.08 metres (42½ in.).

The sidearm in the scabbard 78/84 = 0.4 metres (15½ in.).

Swahili (Kisuaheli) Measures of Area.

The measures of area in Kisuaheli are expressed in terms of the measures of length with the addition of the words 'upana' for breadth and 'urefu' for length.

Swahili (Kisuaheli) Measures of Volume.

1 Kibaba = 0.8 litres = 1½ pints.

1 Kizaga = 2 kibaba = 1.6 litres = 2¾ pints.

1 Pishi = 2 kizaga = 4 kibaba = 3.2 litres = 5½ pints = ¾ gallon.

6 Kibaba = 1 gallon.

1 Fara = 12 pishi = 8 gallons.

1 Mzo or jizla = 60 pishi = 40 gallons.

¹ The italicized measures and weights are fixed by regulation of August 25, 1898.

Notes for Measures of Volume.

1 white wine flask filled to usual level = 0.75 litres.

1 Askari flask (regulation) = 1.00 litres.

The drinking cup of the flask filled not quite full = 0.50 litres.

The drinking cup of the flask filled to the upper mark = 0.30 litres.

The drinking cup of the flask filled to the middle mark = 0.20 litres.

The drinking cup of the flask filled to the lower mark = 0.10 litres.

1 aluminium Askari cooking pot = 11.00 litres.

I. The drinking cup of the flask (weight = 65 grammes) filled level with the brim contains :

	grammes.
Millet or sorghum (mtama)	360
„ (mwele)	370
Eleusine (ulezi or uwimbi)	385
Maize (mhindi)	330
Rice (mshele)	400
Beans (kunde)	370
Shelled ground-nuts	335
Mtama meal	295

II. The tarbush (weight = about $\frac{1}{4}$ German pound. Not very useful, volume varies somewhat) filled level with brim contains :

	pounds (German).
Meal	about $3\frac{1}{3}$
Rice	„ $5\frac{1}{4}$
Millet (mtama)	„ $4\frac{1}{4}$
Maize	„ $4\frac{1}{4}$

III. The Haversack (weight = $\frac{1}{2}$ pound (German)) filled level with brim contains :

	pounds (German).
Meal	$12\frac{1}{2}$
Small beans	$14\frac{3}{4}$
Rice	$16\frac{1}{2}$
Millet (mtama)	16
Maize	$15\frac{1}{2}$
Manioc	12
Sweet potatoes	$10\frac{1}{4}$
Ground nuts	$11\frac{1}{2}$
Millet (mwele)	$16\frac{1}{2}$

IV. The regulation tin box—small pattern, weight = 18 pounds (German), large pattern, weight = 21 pounds (German)—filled level with brim contains :

	<i>Small.</i> pounds (German).	<i>Large.</i> pounds (German).
Meal	58½	87½
Little beans	67½	89
Rice	80	112
Millet	75	105
Maize	66	95
	kilogrammes or litres.	kilogrammes or litres.
Water	41½	60

V. 1 Kibaba filled level with brim contains :

	grammes.
Rice	665
Maize	610
Mtama	640
Meal	560
Beans	600

Various Measures.

Beads are bought by the string (kete). 1 timba = 2 makete ; 1 fundo = 10 makete. Other objects are bargained for by 'units of twenty'. 1 korja = 20 pieces.

The uncut piece is called gora, whatever its length.

Weights of Meat.

Meat without skin and entrails but including bones :

	kilogrammes.
1 large ox	170-200
1 small ox	120-150
1 large goat	17
1 small goat	10
1 large sheep	17
1 small sheep	10

Daily Ration Allowances on an Expedition.

	pounds (German).
For millet (mtama)	2
For millet (mwele)	2
For eleusine (ulezi)	2
For maize (mhindi)	2
For rice ¹ (mshele)	2
For beans ¹ (kunde)	2
For meal ¹ (unga)	2
For sweet potatoes (viazi vikuu)	3
For manioc ² (mhogo) fresh	3½
For manioc ³ (mhogo) dried	2½

If meat is distributed, the above allowances may be reduced.

The most popular and most nourishing grains are rice, maizemeal, and meal of white mtama. These three sorts could be given every day without alternation, while one varies the others as much as possible. Beans are generally found disagreeable, and had better not be given alone. The men can live on meat alone only for 1-3 days. Salt is taken little at food.

Weights.

Units : 1 kilogramme = 1,000 grammes = 2 German pounds.
100 German pounds = 112 English pounds.

Old Measure.

1 Zentner	50 kg.
1 Pound	500 grm.
1 Lot	16,667 grm.
1 Ounce = 2 lot	33,334 grm.

Swahili (Kiswaheli) Measures.

- 1 *Wakia* = 28·35 grm. = 1 oz. (avoir.).
- 1 *Ratel* (ratli) = 16 wakia = 453·6 grm. = 1 lb. (avoir.).
- 1 *Mau* (mauni) = 3 ratel = 1·36 kg. = 3 lb. (avoir.).
- 1 *Frasila* = 35 ratel = 15,876 kg. = 35 lb. (avoir.).
- 10 *Frasila* = 1 *jizla*.
- 64 *Frasila* = about 1 German ton (1,000 kg.).
- 128 *Frasila* = 1 English ton.

¹ In case of necessity 1½ pound per day for each is enough for some time.

² About 4 large roots.

³ About 6-7 large pieces.

Notes on Weights.

pounds (German).

$\frac{1}{4}$ = 1 tarbush.

$\frac{1}{2}$ = 1 haversack.

1 = 1 flask with cup and band or 1 sidearm 71/84 with scabbard.

2 = 1 small entrenching tool or 1 cooking tripod.

5 = 2 tent canvases or 1 camel-hair coverlet.

9 = 1 Light Infantry rifle 71 or 1 empty petroleum tank with lid.

18 = 1 regulation tin box, small pattern.

21 = 1 regulation tin box, large pattern.

WHITE POPULATION OF GERMAN

(A) POPULATION BY*

Administrative Districts.	Germans.	Austrians and Hungarians.	Swiss.	Dutch.	British.	Colonial British.	Danes.	Swedes.	Norwegians.	Russians.	Italians.
Tanga	394	9	8	1	9	...	...	...	...	...	1
Pangani	89	1	...	...	2	...	...	...	...	...	1
Bagamoyo	56	3	1	...	...	...	...	...	...	...	...
Dar-es-Salaam	818	19	3	8	2	...	...	...	...	1	8
Rufiji	54	3	...	...	...	...	...	...	...	...	...
Kilwa	49	4	...	...	...	...	...	...	...	...	...
Lindi	94	...	1	...	11	...	...	...	1	...	1
Wilhelmstal	363	12	...	2	6	1	...	...	...	18	...
Morogoro	194	13	2	...	2	...	...	...	...	...	2
Langenburg	149	...	...	2	...	...	...	...	...	...	...
Songea	33	...	1	...	...	...	...	...	...	...	...
Moshi	432	6	...	...	46	234	...	...	...	33	22
Kilimatinde	153	3	...	...	18	...	2	3	...	...	4
Mpapwa	112	6	1	...	19	1	...	...	...	...	...
Tabora	174	6	2	10	9	...	3	...	...	...	7
Mwanza	108	...	...	5	...	32	...	...	...	5	...
Iringa	108	4	2	...	...	...	...	...	...	...	...
Mahenge	26	1	...	...	...	...	...	...	...	...	...
Ujiji	42	2	1	9	...	...	...	...	...	...	...
Urundi	30	...	...	9	...	...	...	...	...	...	2
Ruanda	30	...	...	7	1	...	...	...	...	...	3
Bukoba	71	2	1	12	3	...	...	...	...	1	4
Total, Jan. 1, 1912	3579	94	23	65	128	268	5	3	1	58	55
Total in previous year	3113	100	37	63	73	258	9	2	...	50	58
Decrease or Increase	+ 466	- 6	- 14	+ 2	+ 55	+ 10	- 4	+ 1	+ 1	+ 8	- 3

* Including 233 Boers.

EAST AFRICA, JANUARY 1, 1912

NATIONALITY

Greeks.	Belgians.	French.	Turks, Syrians, Romanians, Bulgarians.	Spanish.	Portuguese.	N. Americans.	S. Americans.	Other Europeans.	Total.	Administrative Districts.
8	...	1	...	...	...	1	...	...	482	Tanga
...	...	...	...	...	...	...	...	...	93	Pangani
...	...	2	...	...	...	...	...	...	62	Bagamoyo
36	...	5	68	...	...	...	...	...	968	Dar-es-Salaam
...	...	...	...	...	...	...	...	...	57	Rufiji
...	...	...	...	...	...	1	...	...	54	Kilwa
2	...	...	...	...	...	...	...	...	110	Lindi
6	...	...	...	...	4	2	...	...	414	Wilhelmstal
5	1	...	6	...	...	3	...	...	228	Morogoro
...	...	1	...	...	...	...	...	...	152	Langenburg
...	...	...	...	...	...	...	...	...	34	Songea
44	...	3	11	...	...	...	...	...	831	Moshi
12	...	...	9	...	...	...	2	...	206	Kilimatinde
1	...	...	...	...	...	...	...	...	140	Mpapwa
202	2	16	1	...	...	...	1	...	433	Tabora
16	...	10	...	...	...	7	...	10	193	Mwanza
1	...	...	...	...	...	...	...	...	115	Iringa
...	...	...	...	...	...	...	...	...	27	Mahengo
...	1	28	...	...	...	...	...	3	86	Ujiji
...	...	11	...	...	...	...	...	...	52	Urundi
...	...	24	4	...	...	...	...	1	70	Ruanda
3	...	12	...	...	...	...	...	...	109	Bukoba
336	4	113	99	...	4	14	3	14	4866	Total, Jan. 1, 1912
239	6	110	84	1	7	7	...	10	4227	{ Total in previous year
+ 97	-2	+ 3	+ 15	-1	-3	+ 7	+ 3	+ 4	+ 639	{ Decrease or Increase

WHITE POPULATION OF GERMAN

(B) POPULATION BY

Administrative Districts.	Government Officials.	Officers and N.C.O.'s of Protectorate Troops.	Clergy and missionaries.	Cultivators, planters, farmers, gardeners.	Engineers, machinists, contractors, &c.	Labourers, mechanics, miners, &c.	Traders, shopkeepers, innkeepers, carriers.	Sailors, fishermen.	Doctors, doctors' assistants, chemists, dentists.
Tanga	46	7	10	128	36	20	81	1	...
Pangani	10	1	...	45	9	...	1	...	...
Bagamoyo	12	2	19	6	1	...	2	...	...
Dar-es-Salaam	190	53	24	30	34	86	146	...	5
Rufiji	12	2	...	22	5	...	1	...	...
Kilwa	12	1	2	16	1	1	5	...	...
Lindi	12	6	21	39	4	...	7	...	...
Wilhelmstal	24	2	32	101	22	23	20	...	1
Morogoro	16	3	17	73	13	26	15	...	...
Langenburg	9	8	30	13	1	3	2	1	1
Songea	4	2	12	...	...	...	2	...	...
Moshi	20	8	35	228	31	56	18	...	1
Kilimatinde	2	9	14	9	30	84	12	...	15
Mpapwa	12	6	13	3	7	6	23	...	1
Tabora	18	9	37	5	124	96	43	...	...
Mwanza	18	11	34	18	5	13	39	...	3
Iringa	2	10	12	13	...	12	2	...	1
Mahenge	...	7	10	1	...	...	...	...	...
Ujiji	6	12	39	2	1	2	2	1	1
Urundi	1	13	20	...	...	...	...	...	...
Ruanda	4	11	35	...	...	...	6	...	...
Bukoba	6	13	33	6	3	1	15	...	...
Total, Jan. 1, 1912	436	201	449	758	327	429	442	3	29
Total in previous year	401	195	428	683	356	293	311	...	16
Decrease or Increase	+ 35	+ 6	+ 21	+ 75	- 29	+ 136	+ 131	+ 3	+ 13

EAST AFRICA, JANUARY 1, 1912

CALLING AND CREED

Other occupations or no occupation.	Total of grown male population.	Total of grown female population.	Children.	Total of white population.	Protestant.	Roman Catholics.	Others.	Administrative Districts.
9	338	63	31	432	267	149	16	Tanga
...	66	15	12	93	84	9	...	Pangani
...	42	14	6	62	32	29	1	Bagamoyo
55	623	190	155	968	707	221	40	Dar-es-Salaam
6	48	7	2	57	48	9	...	Rufiji
...	38	11	5	54	48	6	...	Kilwa
1	90	16	4	110	68	28	14	Lindi
2	227	102	85	414	315	89	10	Wilhelmstal
8	171	42	15	228	138	74	16	Moregoro
2	70	32	50	152	133	19	...	Langenburg
...	20	10	4	34	18	16	...	Songea
6	403	192	236	831	622	202	7	Moshi
...	175	20	11	206	114	62	30	Kilimatinde
22	93	32	15	140	102	31	7	Mpapa
51	383	35	15	433	155	72	206	Tabora
2	143	30	20	193	135	42	16	Mwanza
...	52	32	31	115	83	32	...	Iringa
...	18	9	...	27	7	20	...	Mahenge
...	66	20	...	86	20	66	...	Ujiji
...	39	13	...	52	17	35	...	Urundi
...	56	14	...	70	19	51	...	Ruanda
1	78	20	11	109	55	48	6	Bukoba
165	3239	919	708	4866	3187	1310	369	Total, Jan. 1, 1912
166	2849	761	617	4227	2861	1046	320	{ Total in previous year
-1	+390	+158	+91	+639	+326	+264	+49	{ Decrease or Increase

APPENDIX IV

LIST OF PRINCIPAL AUTHORITIES CONSULTED

<i>Das deutsche Kolonialreich</i>	Hans Meyer.
<i>Militärisches Orientierungsheft für Deutsch-Ostafrika, 1911</i>	German Official.
<i>Anleitung zum Felddienst in Deutsch-Ostafrika</i> .	German Official.
<i>Die deutschen Schutzgebiete in Afrika und der Südsee (Jahresberichte)</i>	German Official.
<i>Das deutsche Kolonialblatt</i>	German Official.
<i>Mitteilungen aus den deutschen Schutzgebieten (1895-1913)</i>	Supplements to the <i>Kolonialblatt</i> .
<i>Die deutsche Kolonialzeitung</i>	
<i>Koloniale Monatsblätter</i>	
<i>The Africa Pilot, Part III, 1915</i>	Admiralty.
Consular Report on German East Africa, 1909-12 (No. 5171)	Foreign Office.
<i>The Colonization of Africa</i>	Sir H.H. Johnston.
<i>British and German East Africa</i>	Brode.
<i>Le Mouvement géographique</i>	Organ of Belgian Interests in the Congo.

The compilers are also indebted to the Rev. W. H. Kisbey for information orally communicated.

APPENDIX V

PERSONALITIES

ABDULLAH, Government Akida at Korogwe. Very cunning, untrustworthy man. Uneducated but clever. Age about 50.

ARCHI, second Government Akida at Korogwe. Educated, clever, knows English fairly well, rather slippery. Would favour the English. Age about 38.

REV. T. H. BIRLEY,¹ Archdeacon of Korogwe.²

CHAKA, Jumbe of *Kwa Chaka*. Cunning and untrustworthy. About 50.

L. DIAS (Goa), important trader in Tanga.

DOSA (Indian) has chief native shop at Korogwe.

JOHANSEN (REV.), resides at Hohenfriedberg. Head of Lutheran Evangelical Missions in Usambara.

KEATES¹ (REV.), Head of Mission at Magila.³

KIMWERI, Jumbe of Zavuza (Lower District, Pangani River). Worthless old man of small influence.

KUPYASA, another Jumbe of some influence in Uzeguha. About 50. Docile.

HERR VON LIEBERT was in 1908 Governor-General. His death has been reported on the Russian front.

REV. P. LIMO, at *Kwa Mdami* (Uzeguha). Native missionary.⁴ Age about 46. Clever man, with good knowledge of English, and has much influence in Zigualand (Uzeguha).

REV. A. MBEZI, at *Korogwe* (Luvu). Large railway centre Tanga-Kilimanjaro Railway. Native missionary.⁴ Age about 35. Fairly clever. English moderate. Much influence with natives.

HERR MEYER, District Governor of Tanga.

¹ Interned, with others not mentioned.

² *Korogwe* is directly on the railway and has large stone buildings.

³ *Magila* is a very large mission station built as a quadrangle (stone buildings) and could well be used for billeting purposes. About 4 miles from Muheza on the Tanga-Kilimanjaro Railway, 30 miles from Tanga.

⁴ Now probably at the mission station.

JOHN NGOBILO, Government clerk at Korogwe. Weak, untrustworthy. Not much influence.

META PRATAPSING (Indian), an important merchant.

SACHABA, Jumbe of *Kwa Sigi* (a large village on the Pangani River). Influential, clever, cunning. Age about 50.

REV. J. SAIDI, at *Kwa Mdami*. Native missionary.² Age about 32. Very clever and speaks English fluently.

SAMBEZI, Jumbe of Korogwe. Old man. Friendly disposition; liked by the people. No education.

REV. S. SEHOZA, at *Misoowe* (Bondei). Native missionary.² Age about 40. Very clever man, speaks English fluently. Great influence with the Wabondei.

SONYO, Jumbe of *Kwa Sonyo*. One of the largest villages in Uzeguha, about 60 miles from Korogwe station. He is probably the most important chief in the Uzeguha country. Has 80 wives. Most of the petty chiefs in other villages are under him and are his sons or sons-in-law. An old man. Has been a warrior in his time, but now docile. Has a stone fort in his village.

WOODWARD,¹ Archdeacon of Magila.

HERR ZSCHARTZSCH (Pole), chief trader at Muheza.

ZUGANATTO (Greek), chief trader at Korogwe, also a Government builder of bridges.

ZUGANATTO (brother of above), trader at Mombo.

These are the chief people between the Government centres of Tanga and Pangani at the coast and that of Wilhelmstal (Lushoto). The names of the German officials are those last known.

¹ Interned, with others not mentioned.

² Now probably at the mission station.

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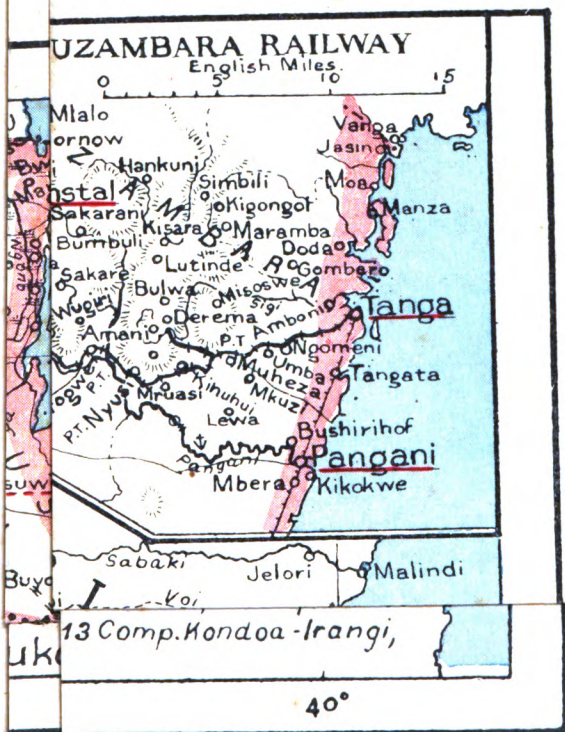
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